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# HELMINTHOLOGICAL ABSTRACTS

*incorporating*

**BIBLIOGRAPHY OF HELMINTHOLOGY**

COMPILED FROM WORLD LITERATURE OF 1953


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# HELMINTHOLOGICAL ABSTRACTS

INCORPORATING BIBLIOGRAPHY OF HELMINTHOLOGY

FOR THE YEAR 1953

Vol. 22, Part 6

**726—Acta Neurochirurgica. Vienna.**

a. SALTUK, E., YENERMEN, M. & YÜCEL, F. A., 1953.—" Deux cas d'énormes *Echinococcus granulosus* du cerveau." **3** (2), 180–186. [English, Italian, German & Spanish summaries p. 185.]

**727—Acta Pediátrica Española.**

a. LEY, E. & BRAVO, G., 1953.—" Cisticercosis cerebral." **11** (129), 862–867.

**728—Acta Veterinaria. Belgrade.**

a. SOFRENOVIĆ, D., ŠIBALIĆ, S. & CVETKOVIĆ, L., 1953.—[*Spirura rytipleurites* Deslongchamps 1824, in a cat with the localization of parasite in the oesophagus.] **3** (1), 165–170. [In Serbian: English summary p. 170.]

(728a) *Spirura rytipleurites*, found in a cat from Belgrade, is reported for the first time in Yugoslavia. The worms were attached to the mucosa of the oesophagus which is a new location for this parasite. *S. rytipleurites* does not appear to be pathogenic to this host unless there is a massive infection. G.I.P.

**729—Acta Zoologica Fennica.**

a. GERLACH, S. A., 1953.—" Die Nematodenfauna der Uferzonen und des Küstengrundwassers am Finnischen Meerbusen." No. 73, 32 pp.

(729a) Gerlach has examined the nematodes in 21 samples taken from the shore in the Gulf of Finland. He found 46 species of free-living nematodes of which 18 were new for this region and one new to science. He discusses the relative abundance of species in samples from the seashore, from slopes washed by high tides and from subsoil water above tide level. *Halichoanolaimus fennicus* n.sp., of which one female and one larva were found, is characterized by having four fine head bristles and six rounded head papillae in addition to six lip papillae. The shape of the tail and the small size of the lateral organs are other characteristic features. No male was found. M.T.F.

**730—Afrique Française Chirurgicale.**

a. LOMBARD, P., FRAILONG, J. & SABATINI, R., 1953.—" Echinococcose pleuro-pulmonaire avec rupture intra-pleurale du kyste." Year 1953, No. 3, pp. 340–341.

b. COUNIOT, J., 1953.—" Rupture traumatique d'un kyste hydatique du poumon—hémoptysies secondaires—pneumectomie." Year 1953, No. 3, pp. 345–348.

c. SEROR & STOPPA, 1953.—" De la kystectomie dans le traitement des kystes hydatiques du foie." Year 1953, No. 3, pp. 356–359.

* Titles so marked throughout this number have not been seen in the original.

**731—Agricoltura Napoletana.**

*a. PALOMBI, A., 1953.—[The most important helminths parasitic on Italian domestic animals.] **20** (5), 5–11. [In Italian.]

*b. PALOMBI, A., 1953.—[The most important Platyhelminthes parasitic on domestic animals in Italy. II. Cestodes of Carnivora and their biology.] **20** (10), 5–9. [In Italian.]

**732—Agriculture. Paris.**

*a. MARTIN, M., 1953.—" Le nématode: ennemi no. 1 de la betterave." No. 145, pp. 105–106.

**733—Al-Mihan Al-Tibbiyah. Baghdad.**

a. WATSON, J. M., 1953.—"Studies on bilharziasis in Iraq. Part X. Incidence and epidemiology in the city of Basrah." **1** (3), 2–31.

(733a) The present incidence of schistosome infection in the city of Basrah and the surrounding irrigated area is compared with that in 1925. Although improved sanitation, free treatment and pure water supply have been provided schistosome eggs were present in 32·2% of the 4,252 individuals examined. *Bulinus truncatus* was present in 5 out of the 20 irrigation canals examined, and in the city were found mainly in the central area. Although the oecological conditions in the southern half of the Basrah province were apparently suitable for *Bulinus* their absence is attributable to the occasional rises in salinity of the estuary water.

R.T.L.

**734—American Poultry Journal. Eastern Edition.**

*a. NOBLE, G. A., 1953.—" The large roundworm of poultry." **84** (5), 32, 37.

**735—Anales de la Asociacion Española para el Progreso de las Ciencias.**

a. VARA LOPEZ, R., 1953.—" Hidatidosis osea." **18** (4), 964–995.

**736—Anesthésie et Analgésie. Paris.**

a. BOUÉ, A., 1953.—" L'anesthésie dans la chirurgie des kystes hydatiques du poumon." **10** (3), 390–396.

**737—Annales de l'Institut National de la Recherche Agronomique. Série C. Annales des Épiphyties.**

a. HOFFMANN, A., 1953.—" Répertoire analytique des espèces animales nuisibles aux cultures en France (Métropole et départements d'Outre-Mer) ayant présenté d'intéressantes particularités en 1952." **4** (3), 423–433.

(737a) In this list of plant pests in France Hoffmann records *Ditylenchus destructor* in mushroom beds in the Paris region, *Pratylenchus pratensis* on lily-of-the-valley in the Milly region (Seine-et-Oise), *Meloidogyne* on vines in the department of Herault and in market gardens and on tobacco around Bordeaux, Bayonne and in the department of Lot-et-Garonne, and *Heterodera schachtii* in numerous foci in the departments of North, Pas-de-Calais, Aisne, Seine-et-Marne, Seine-et-Oise and Oise.

S.W.

**738—Annali della Facoltà di Agraria. Milan.**

a. PUJATTI, D., 1953.—" *Ascaridia galli*, Schrank in *Gallus domesticus* L. nel Sud-India." Nuova serie, **2**, 75–78.

**739—Annali di Medicina Navale e Tropicale.**

a. CICCHINI, T., 1953.—" L'eosinofilia in alcune parassitosi intestinali. Nota I." **58** (2), 154–164.

b. CICCHINI, T., 1953.—" L'eosinofilia in alcune parassitosi intestinali. Nota II." **58** (3), 253–260.

## 740—Annals of the Phytopathological Society of Japan.

a. NISHIZAWA, T., 1953.—[On the relation between the rice nematode disease 'white tip' and the stem-rot of rice plants.] **17** (3/4), 137–140. [In Japanese: English summary p. 140.]

(740a) Potted rice plants were inoculated with husks of nematode-diseased rice grains or with stem-rot sclerotia or with both. Stem-rot infection became more severe in plants inoculated only with stem-rot fungus than in plants inoculated with both nematodes and fungus sclerotia. Weight of ear and of 1,000 unhulled grains decreased in this order: stem-rot infected plants, nematode infected plants and plants with a mixed infestation of both organisms. M.T.F.

## 741—Annals of Surgery.

a. EVANS, S. S., LUBBEN, Jr., J. F. & WHIGHAM, H. E., 1953.—" Pancreatic pseudocyst of ascaris origin. Report of a case." **138** (5), 801–804.

## 742—Anuarul Institutului de Patologie si Igienă Animală. Bucharest.

a. MIHAESCU, N., STOICAN, E. & ŞUTEU, E., 1953.—" Diagnosticul alergic în ascaridioza porcina şi distomatoza ovina." **4,** 266–272. [French & Russian summaries pp. 270–272.]
b. MIHAESCU, N., STOICAN, E. & ŞUTEU, E., 1953.—" Anchete asupra raspindirii helmintiazelor la animalele domestice din R.P.R." **4,** 273–279. [French & Russian summaries pp. 278–279.]
c. LUNGU, V., MIHAESCU, N. & ŞUTEU, E., 1953.—" Studiu epizootologic asupra dictiocaulozei ovine." **4,** 280–290. [French & Russian summaries pp. 289–290.]
d. LUNGU, V., MIHAESCU, N., STOICAN, E. & ŞUTEU, E., 1953.—" Acţiunea terapeutica a piperazinei în ascaridioza cabalina şi ascaridioza porcina." **4,** 291–303. [French & Russian summaries pp. 301–303.]
e. STOICAN, E., 1953.—" *Eulimdana clava* la porumbel in R.P.R." **4,** 304–307. [French & Russian summaries pp. 306–307.]

(742a) The authors prepared an extract of Ascaris muscle by treating it with hydrochloric acid and of whole *Fasciola hepatica* with sodium hydroxide. Both extracts were used at a dilution of 1:200 in physiological saline. Mice infected with Ascaris eggs and then injected with the Ascaris extract showed no reaction but pigs gave doubtful reactions eight days and positive reactions 12 days after infection. Positive reactions were confirmed in 70% of cases on post-mortem examination and negative results in 95%. In sheep with liver-flukes or liver lesions caused by them the reactions were positive in 74·4% and 48·5% respectively but some false positives occurred in sheep with lesions in the liver which had not been caused by flukes. Sheep which were not infected and had no lesions in the liver showed no reaction. Reactions corresponded with infection in 92% to 100% of cases. There was no cross reaction with *Dicrocoelium* infection. S.W.

(742b) In this survey of the helminths in domestic animals in Rumania the authors examined animals from two districts, around Pitesti and around Muscel. Totals of 68·9% in the former and 62·4% in the latter were infected. The percentage incidences of intestinal strongyles, lungworms, ascaris, trematodes, Trichuris, hydatid, Capillaria, Heterakis and Ascaridia are tabulated under their various hosts. S.W.

(742c) In 1953 there was a severe epizootic of dictyocauliasis in sheep in Rumania with a morbidity varying between 70% and 95% and a mortality, up to the time of treatment, of between 4% and 32·8%. The severity is attributed to the heavy rainfall and the favourable temperature for larval development during October, November and December of 1952 and April, May and June of 1953. Karakul sheep were the most susceptible and "tsourcana" the most resistant. Poor nutrition lowered the resistance and aggravated the disease. Intratracheal injections of phenothiazine (made soluble) arrested the mortality after three to ten days treatment. S.W.

(742d) The authors have tested the efficacy of piperazine against ascarids in horses and pigs. The drug was given at a dose rate of 0·05 gm. per kg. live-weight mixed with the feed and was eaten readily by the foals (one to two years old) but not by the pigs (four to six months old). In the foals the intenseefficacy was 76·3% and the extenseefficacy 100%. Only 47·8% of the pigs eliminated ascarids and the intenseefficacy was 54·9% (limits 13·5% and 100%). The variable efficacy in the pigs is attributed to hyperacidity of the gastric juice which reduces the anthelmintic action of piperazine; when given in capsules the intenseefficacy was increased to 76·6% and the extenseefficacy to 90%. No side effects were observed in any animal. S.W.

(742e) Stoican records *Eulimdana clava* for the first time in Rumania. The adult nematodes were found in the peritracheal connective tissue of domestic pigeons and were pathogenic. Larval forms were present in the blood. S.W.

## 743—Aquarien- und Terrarien Zeitschrift.

a. REICHENBACH-KLINKE, H., 1953.—" Erneutes Auftreten des an Fischkiemen parasitierenden Saugwurmes *Diplozoon barbi*, Reichenbach-Klinke." Ser.2, **6** (9), 285–287.

(743a) In 1951 [for abstract see Helm. Abs., **20**, No. 603b] Reichenbach-Klinke described as a new species *Diplozoon barbi* from the gills of a *Barbus semifasciolatus* recently imported from south-east Asia and kept with other fish in a fresh-water aquarium. In spite of careful and continued search the trematode was not found again in the aquarium until, in the summer of 1953, it was recovered from the gills of one of a number of *Puntius tetragona* which died there: *D. barbi* is considered to have been the sole cause of death. Reichenbach-Klinke concludes that *D. barbi* must have established itself in a European aquarium after having been imported from Asia in 1950—the circumstances showed that reimportation could not have been possible. The life-history and bionomics of *D. barbi* are still unknown. A.E.F.

## 744—Araneta Journal of Agriculture. Philippines.

a. GAPUZ, R. B., 1953.—" Liver-fluke infection of AIA dairy herd: its occurrence, cure and control." **1** (1), 53–55.

## 745—Archiv für Kinderheilkunde.

a. JANSSEN, G., 1953.—" Leberegelinfektion (Fasciolosis hepatica) bei einem Kleinkinde." **146** (2), 167–170.

## 746—Archiv für Klinische Chirurgie vereinigt mit Deutsche Zeitschrift fur Chirurgie.

a. MARANGOS, G., 1953.—" Zur operativen Behandlung der Lungenechinokokken." **275** (1/2), 50–61.

## 747—Archives des Maladies de l'Appareil Digestif et des Maladies de la Nutrition.

a. KERNEIS & DELORD, 1953.—" Echinococcose alvéolaire." **42** (3), 394–397.
b. LAMBLING, A., HEPP, J., CONTE, M., RISTELHUEBER, J., BONFILS, S. & GIREY, 1953.—" Echinococcose alvéolaire du foie." **42** (3), 397–399.

## 748—Archives of Ophthalmology.

a. LITRICIN, O., 1953.—" Echinococcus cyst of the eyeball." **50** (4), 506–509.

## 749—Archivio di Chirurgia del Torace.

a. BIOCCA, P., 1953.—" Considerazioni sul trattamento chirurgico delle cisti da echinococco del polmone." **10**, 243–265. [English, French & Spanish summaries pp. 261–262.]
b. SAVONUZZI, G. & FERRANTI, L., 1953.—" La cura radicale per le cisti da echinococco del polmone: enucleazione totale." **10**, 267–273. [English, French & Spanish summaries p. 271.]

**750—Archivio E. Maragliano di Patologia e Clinica.**

*a. PENDE, G. & GIORDANA, G., 1953.—" Nefrosi acuta anurica da antielmintico." **8** (3), 671–685.

**751—Archivos del Hospital Universitario. Habana.**

a. BARQUET CHEDIAK, A., 1953.—" La anemia de la uncinariasis: estudio fisiopatogénico." **5** (6), 485–511. [English summary p. 510.]

(751a) Barquet Chediak reviews the various theories of the causes of hookworm anaemia and presents his observations on 15 cases. The clinical characteristics, laboratory findings and response to iron therapy are described and tabulated. He concludes that a double mechanism operates in the production of hookworm anaemia, namely, constant loss of blood through the digestive tract combined with a diet deficient in iron. S.W.

**752—Archivos de Pediatría del Uruguay.**

a. SCHROEDER, A. H. & MEDOC, J., 1953.—" Quiste hidático de cerebro." **24** (9), 559–580.

**753—Archivos de Zootecnia. Córdoba.**

a. POZO, R., 1953.—" Hallazgo en España, en el intestino de *Lepus granatensis* Rosenhauerd, del cestodo *Cittotaenia pectinata* Goeze 1782." **2** (7), 294. [English summary p. 294.]

(753a) *Cittotaenia pectinata* is reported for the first time from Spain. It was found in *Lepus granatensis* at Hornachuelos, near Córdoba. M.MCK.

**754—Arquivos Brasileiros de Cardiologia.**

*a. BARBATO, E. C. D., 1953.—" Pneumopatia e cor pulmonale crônico esquistossomóticos." **6** (3), 195–305.

**755—Arquivos Brasileiros de Medicina Navale.**

*a. PRATA, A. R., 1953.—" Resultados tardios no tratamento específico da esquistossomose." **14** (45/46), 2569–2573.

**756—Athena. Rome.**

*a. TOCCO, L., 1953.—" Nuovo indirizzo per la cura medica della cisti da echinococco." **19** (5), 199–202.

**757—Auburn Veterinarian. Alabama.**

a. McELYEA, J. H., 1953.—" The relations of parasitic infections to susceptibility to other diseases." **10** (1), 39–43.
b. NUNNERY, J., 1953.—" The control of internal parasites by the application of chemicals to the soil." **10** (1), 48–51.

(757a) In this review of the literature, McElyea lists *Setaria digitata, Strongyloides papillosus, Fasciola hepatica, Onchocerca reticulata, Macracanthorhynchus hirudinaceus, Ascaris lumbricoides, Ascaridia galli, Anoplocephala perfoliata, Thelazia rhodesii, Dictyocaulus filaria, Oesophagostomum dentatum, Stephanurus dentatus, Trichosoma aerophilum, Crenosoma vulpis, Prosthogonimus macrorchis* and *Oxyspirura mansoni* as helminths which predispose their hosts to other diseases or actually introduce the pathogenic organisms into the host's tissues. S.W.

(757b) Nunnery reviews the literature dealing with the control of free-living stages of helminths by treating the soil with various chemicals. The use of copper sulphate and lime against fascioliasis, sodium pentaborate and tetraborate against dog hookworm larvae, sodium chloride against hookworm larvae, nitrogenous fertilizers against sclerostomes and benzene hexachloride against swine kidney-worm is briefly discussed. S.W.

**758—Australian Plant Disease Recorder.**

a. WALKER, J., 1953.—" Root knot of leek." **5** (3), 27–28.

(758a) Walker records the occurrence for the first time in New South Wales of root knot eelworm on leeks (*Allium porrum* L.). It is thought that under normal conditions little damage is caused since *Allium* species are fairly resistant and are grown during the time when eelworm activity is low. M.T.F.

**759—Boletim. Directoria da Produção Animal. Rio Grande do Sul, Brazil.**

*a. CORRÊA, O. & GLOSS, R., 1953.—[The use of a mixture of sodium fluoride and phenothiazine as anthelmintic for dairy cattle.] **9** (15), 20–31. [In Portuguese.]

**760—Boletín Médico del Hospital Infantil. Mexico.**

*a. MURGUÍA, M. R., CONTRERAS, R. & CISNEROS, F., 1953. " Un caso de cisticercosis cerebral. Tratamiento quirúrgico." **10** (5), 549–556.

**761—Boletín de la Sociedad de Cirugía del Uruguay.**

*a. ARMAND UGÓN, C. V., 1953.—" A propósito del tratamiento del quiste hidático del pulmón." **24** (2/3), 151–153.

**762—Boletines y Trabajos. Academia Argentina de Cirugía.**

*a. CRAUSAZ, P. H., 1953.—" Hidatidosis pulmonar y hépatopulmonar." **37** (3), 90–100.
*b. BUSTOS, F. M., 1953.—" Neumotórax hidatídico espontáneo en una niñita de dos años y medio." **37** (7), 218–219.

**763—Bollettino di Zoología.**

a. SCIACCHITANO, I., 1953.—" Fauna di Romagna (Collezione Zangheri). Oligocheti, irudinei, gordii. (Nota seconda)." **20** (1) 3-11.

(763a) Sciacchitano records from the Romagna area in Italy the leech, *Haemopis sanguisuga*, at S. Carlo di Roversano, near Cesena in the valley of the Savio, *Parachordodes gemmatus* and *P. tolosanus* at S. Benedetto in the upper valley of the Montone, *Paragordius stylosus* at Castrocaro and *Gordius setiger* at Campigna on the upper Bidente, municipality of S. Sofia. He notes the European countries and regions in Italy where these have been recorded and lists the gordiaceans found to date in Romagna. M.MCK.

**764—Botyu-Kagaku. Kyoto.**

a. NISHIZAWA, T., 1953.—[On the prevention of the rice nematode disease 'sentyu singare byô' by Folidol.] **18** (1), 1–6. [In Japanese: English summary p. 6.]

(764a) Folidol was used in experiments on the control of white tip disease of rice due to *Aphelenchoides besseyi*. Infested seedlings were either sprayed or had their roots dipped for 24 hours in the chemical. The dipped plants were heavier and taller than those in all other treatments and had a greater number of ears with heavier grain. M.T.F.

**765—British Journal of Pharmacology and Chemotherapy.**

a. MANSOUR, T. E. & BUEDING, E., 1953.—" Kinetics of lactic dehydrogenases of *Schistosoma mansoni* and of rabbit muscle." **8** (4), 431–434.

(765a) Mansour & Bueding have compared the activity of lactic dehydrogenase prepared from adult *Schistosoma mansoni* with that of lactic dehydrogenase from rabbit muscle. The optimum *p*H for the worm enzyme was 6·9 compared with 7·8 for the mammalian enzyme. Observations on the optimal concentrations of substrate showed that the dissociation constants and optimal concentrations for lactate were identical for both enzymes; for the schistosome

enzyme the values for pyruvate were six to twelve times higher and for reduced diphosphopyridine nucleotide and for diphosphopyridine nucleotide were slightly higher than for the rabbit enzyme. S.W.

**766—Buletin Stiințific. Sectiunea de Științe Medicale. Bucharest.**

*a. MARZA, V. D., UNGUREANU, E. & BOLDESCU, I., 1953.—" Cercetari asupra embrionarii oualor de *Ascaris lumbricoides* sub influența factorilor chimici și fizici." [Study of the effect of various chemical and physical factors on embryonic development of eggs of *A. lumbricoides*.] **5** (3), 421–434.

**767—Bulletin. Bureau of Biological Research, Rutgers University. New Brunswick.**

a. SHELSWELL, M., 1953.—" The use of serological methods in investigations of the ontogeny of parasites." No. 11, pp. 3–5.

(767a) Shelswell briefly reviews published work on the serology of parasites, especially that of Wilhelmi [for abstract see Helm. Abs., **9**, No. 402a]. He showed that in several trematodes and one cestode the titres of reactions were nearly the same for all stages in the life-cycle of a single species. The author points out the various difficulties which have to be overcome in this type of work but is of the opinion that it will be of value in the determination of life-histories in that it will confirm the relationships of adults and larvae. S.W.

**768—Bulletin of the Faculty of Agriculture, Kagoshima University.**

a. KOUNO, I. & NIIMI, D., 1953.—[On species of nodular worms of swine in Japan.] No. 2, pp. 167–171. [In Japanese: English summary p. 171.]

(768a) *Oesophagostomum longicaudum* has been identified in collections from pigs in Nagoshima and Nagano Prefectures. *O. dentatum* occurred only in Nagano Prefecture. Although the intestinal nodules due to the young worms were not visible to the naked eye, they were often seen in histological examination of the large intestine. R.T.L.

**769—Bulletin of the Faculty of Agriculture, Yamaguti University.**

a. KITANO, N., 1953.—[Parasitological studies on the 'Misima-usi' (Misima cattle). I. On the *Fasciola hepatica* L.] No. 4, pp. 293–296. [In Japanese: English summary p. 296.]

(769a) The results of faecal examination for helminth infection of 75 native cattle on Misima [Mishima] Island, in the Sea of Japan, are tabulated. *Fasciola hepatica* eggs were found in 19, paramphistome eggs in 16 and ova of other helminths in 7. In one instance in which no eggs were present in the faeces there was a positive skin reaction for *F. hepatica*. No cattle had been imported into Misima Island for a long time. R.T.L.

**770—Bulletin de l'Institut Agronomique et des Stations de Recherches de Gembloux.**

a. BERNARD, J., 1953.—" Études sur les nématodes phytophages. (V. Quelques cas de dégats nouveaux ou peu communs en Belgique." **21** (3/4), 3–7.

(770a) In 1950 and 1952 the race of *Ditylenchus dipsaci* which attacks sugar-beet in Belgium was found causing damage to maize. The damage is similar to that caused by *D. dipsaci* on oats, plants being stunted, leaf bases swollen, tissue becoming brittle and plants often dying before harvest time. The type of damage is figured. *Pratylenchus pratensis* was found attacking roots of maize; when severely attacked plants had yellow leaves. *D. dipsaci* was also found attacking oats and sugar-beet in Belgium. J.B.G.

**771—Bulletin. Louisiana Agricultural Experiment Station.**

a. MAYHEW, R. L., 1953.—" The parasites and parasitic diseases of cattle." No. 428, 46 pp. [Revised.]

**772—Bulletin of the Naniwa University. Series B. Agricultural and Natural Science**

*a. MOCHIZUKI, H., TOMIMURA, T. & OKA, T., 1953.—" Cerebrospinal nematodiasis : a provoking factor in Japanese encephalitis: experimental approach (I)." **3**, 29–36.

*b. ISSHIKI, O. & TOMIMURA, T., 1953.—[Histopathological study on paragonimiasis (spontaneous infection with *P. westermanii*) in a swine.] **3**, 37–59. [In Japanese: English summary]

*c. ISSHIKI, O., 1953.—[A case of spontaneous infection with *Paragonimus iloktsuenensis* in dog.] **3**, 61–74. [In Japanese: English summary.]

*d. ISSHIKI, O., 1953.—[Morphological studies on the eggs of the lung-fluke in the lung tissue (spontaneous infection cases).] **3**, 75–90. [In Japanese: English summary.]

**773—Bulletin. Ontario Department of Agriculture.**

*a. KINGSCOTE, A. A., 1953.—" Internal parasites of swine." No. 496, 36 pp.

**774—Bulletin of the Research Council of Israel.**

a. DAVIES, A. M., ELIAKIM, M. & GILON, E., 1953.—" On the diagnosis of bilharziasis in Israel by immunological methods: a preliminary note on the value of extracts of *Schistosoma mansoni* worms." [Correspondence.] **3** (3), 260–261.

(774a) Davies *et al.* tested three antigens in skin and complement fixation tests for the diagnosis of schistosomiasis mansoni. The antigens were prepared from the hepatopancreas of *Australorbis glabratus*, adult *Fasciola hepatica*, and adult *Schistosoma mansoni* from laboratory animals. The last mentioned proved to be the most specific in both tests and, when both were used, gave much better results than those obtained by the usual biopsy or egg recovery methods. S.W.

**775—Bulletin des Sociétés d'Ophtalmologie de France.**

a. DUBOIS-POULSEN, A., PLESSIER, P. & BENAN, 1953.—" Un cas de cysticercose de la papille." Year 1953, No. 4, pp. 359–361. [Discussion by Schiff-Wertheimer p. 362.]

b. VALLÈS, A., 1953.—" Hémorragie rétinienne paramaculaire dans un cas d'oxyurose intestinale ancienne." Year 1953, No. 5, pp. 542–543.

c. BESSIÈRE, E., 1953.—" Sur trois cas différents de filariose oculaire et orbitaire." Year 1953, No. 8, pp. 952–956.

(775c) Bessière describes three cases of ocular disturbances in which a precise diagnosis of filariasis could not be made. In the first two which were attributed to *Onchocerca* infection the only indication was the increased eosinophilia. The third case was believed to have been caused by *Loa loa* and treatment with notezine and phenergan resulted in a rapid cure. S.W.

**776—Bulletin de la Société Vaudoise des Sciences Naturelles.**

a. ALTHERR, E., 1953.—" Nématodes du sol du Jura vaudois et français (I)." **65** (284), 429–460.

(776a) Altherr reports on the nematological constituents of various samples of soil in the "Jura vaudois" at an altitude of 900 m. He describes the following new species: *Dorylaimus jurassicus* n.sp., *D. exilicaudatus* n.sp., *D. paraagilis* n.sp., *D. opistohystera* n.sp., *Dorylaimoides stenodorus* n.sp., *Amphidelus pseudobulbosus* n.sp., *Nygolaimus clavicaudatus* n.sp., *Axonchium leptocephalus* n.sp., *Aporcelaimus conicaudatus* n.sp., *Trilobus allophysoides* n.sp. and *Longidorus monohystera* n.sp. These species are figured and differentiated from their nearest relatives. There is a section on species whose determination is uncertain or which have not yet been reported in Switzerland or in the neighbouring regions of French Jura. J.B.G.

**777—Bulletin of the State Institute of Marine and Tropical Medicine in Gdańsk. Poland.**

a. KOZAR, Z., DŁUŻEWSKI, L., HIRSCHLEROWA, Z. & JAROSZEWSKI, Z., 1953.—" Przypadek toksoplazmozy powikłanej wagrzyca mózgu u osoby dorosłej." **5**, 146–151. [Also in English & Russian pp. 152–163.]

(777a) The authors describe a case of simultaneous infection of the central nervous system with toxoplasma and cysticerci. Complement fixation tests with cysticercus and toxoplasma antigens were positive and the diagnosis was confirmed by the post-mortem findings. They are of the opinion that long-standing cerebral cysticerciasis created favourable conditions for the development of toxoplasma in the central nervous system rather than in the internal organs. S.W.

**778—Bulletin. Texas Agricultural Experiment Station.**

a. PRICE, D. A., HARDY, W. T. & BOUGHTON, I. B., 1953.—" Phenothiazine-salt mixture, free choice, for the control of the large stomach worm in range sheep. An 8-year study conducted under the natural range conditions of the Edwards Plateau." No. 766, 7 pp.

(778a) In an eight-year study of 60 to 75 breeding ewes and their lambs on the Edwards Plateau, Texas, *Haemonchus contortus* was satisfactorily controlled by the continual supply by free choice of a 1:9 phenothiazine-salt mixture. Price *et al.* show graphically that the egg counts of *H. contortus* did not exceed a yearly average of 1,000 [eggs per gramme?] per dosed animal. In a control group of 14 to 18 ewes and their lambs, equivalent egg counts reached 5,000. The year-old male lambs were autopsied each May: in those which had been dosed the highest average number of worms found per lamb in any year was 400, as compared with 1,000 in the undosed male lambs. The sheep consumed an average of nearly one third of a pound of the salt mixture each per month, but the actual consumption varied considerably during the whole period. No toxic effects were observed. M.MCK.

**779—Byulleten Moskovskogo Obshchestva Ispitatelei Prirodi. Otdel Biologicheski.**

a. DUBININ, V. B., 1953.—[A new nematode from the milk glands of *Clethrionomys* sp. with some data on its biology.] **58** (4), 51–56. [In Russian.]

(779a) *Mammolongistriata mammovitae* n.g., n.sp. is described and figured from *Clethrionomys rufocanus arsenjevi* and *C. rutilis hintoni* from the Russian Far East. This new heligmosomatid is nearest to *Longistriata* but has no cuticular striations, possesses 20 crenated longitudinal bands along the body of which the two ventral are particularly well developed, and has the lateral and ventral rays of the bursa arranged in two groups. It thus differs from all the other genera of Viannaiinae. The pathological changes caused by *M. mammovitae* in the milk glands of the host are described. G.I.P.

**780—California Medicine.**

a. LAU, F. Y. K., 1953.—" Electrocardiographic changes occurring with trivalent antimony compounds during therapy of schistosomiasis." **79** (2), 114–117.

**781—Campo. Tucuba.**

*a. PRECIADO CASTILLO, A., 1953.—" La enfermedad del arroz llamada punta blanca o white tip of rice." Ser. 2, **20** (736), 82, 84, 86.

**782—Cancer Research. Chicago.**

a. DUNNING, W. F. & CURTIS, M. R., 1953.—" Attempts to isolate the active agent in *Cysticercus fasciolaris*." **13** (12), 838–842.

**783—Carinthia II. Klagenfurt.**

a. MIHELČIČ, E., 1953.—" Vorläufiger Bericht über die in den Wäldern um Göltschach (Ma Rain, Kärnten) festgestellten Tardigraden und Nematoden." **143,** 115–117.
b. REISINGER, E., 1953.—" Faunistiche Notizen aus Kärnten." **143,** 117–121.

(783a) Mihelčič lists the nematodes and tardigrades found in the forests of Karinth (Austria) under associated plants and types of soil. Nematodes need more moisture th tardigrades but can do with less oxygen so that nematodes are more numerous in damp ar humus-rich biotopes. Several nematode species are found in mosses but humus-rich su strata contain a greater number of families, genera and species. A.E.

(783b) Reisinger includes in this paper a list, with localities, of leeches found in Karinthi This includes *Haemopis sanguisuga*, *Hirudo medicinalis*, *Herpobdella octoculata*, *H. testacea Trocheta subviridis* var. *brunnea*, which five were the most common, and *Hemiclepsis marginat Glossiphonia complanata*, *G. heteroclita* and *Helobdella stagnalis*. S.W

**784—Časopis Lékařů Českých.**

a. CEE, Č., SKŘIVÁNEK, O. & PROCHÁZKA, J., 1953.—" Echinococcus plic—rozpoznán a léčba." **92** (7), 175–179. [Russian summary p. 178.]
b. NĚMEC, R. & MICKA, F., 1953.—" Ileus z askaridosy." **92** (15), 408–409.
c. PRÁŠIL, K., 1953.—" Echinokokkus plic." **92** (20/21), 556–558. [Russian summary p. 558

**785—Československá Dermatologie.**

*a. HORÁČEK, J., 1953.—" Epidemiologii a therapii enterobiase." **28** (8/9), 392–395.

**786—Československá Farmacie.**

a. SEKERA, A. & RAHM, J., 1953.—" Přírodní anthelmintika III. Helenin." **2** (1), 22–24.

(786a) The literature on the chemical constitution of helenin (*iso*-alantolactone) i summarized. R.T.L

**787—Československá Hygiena, Epidemiologie, Mikrobiologie.**

a. JÍROVEC, O., 1953.—" Helminthiase v Československu." **2** (5), 385–395. [German & Russian summaries pp. 393–395.]

(787a) The most frequent helminth infection in Czechoslovakia is enterobiasis. 20% of adults and 50% to 80% of children were infected. Trichuris was found in 6·7% to 36·3% and Ascaris in 1·3%to 12·7% of the population. In comparison with neighbouring countries helminth infections are low; examinations of sewage revealed only small numbers of helminth eggs. G.I.P.

**788—Chemistry and Industry. London.**

a. HARBOUR, H. E., 1953.—" The chemical control of animal parasites." Year 1953, No. 27, pp. 651–656.

**789—Clínica y Laboratorio.**

a. CALVO MELENDRO, J., 1953.—" La vómica hidatídica." **55** (327), 401–420.

**790—Connecticut State Medical Journal.**

a. KUSHLAN, S. D., 1953.—" Trichinosis—the great mimic." **17** (9), 751–754.

**91—Dansk Pelsdyravl.**

a. MOMBERG-JØRGENSEN, H. C., 1953.—"Hvad kom der ud af trikinundersøgelserne sidste vinter?" **16**, 165–166.

(791a) An investigation of trichinelliasis in Denmark showed no case in 4,511 mink, 70 foxes and some other furred animals. S.B.

**92—Dermatologica. Basle.**

a. HAEMMERLI, U., 1953.—" Schistosomen-Dermatitis am Zürichsee." **107** (5), 302–341. [English & French summaries pp. 338–339.]

(792a) A dermatitis-producing schistosome cercaria was previously reported for the rst time from Switzerland [for abstract see Helm. Abs., **21**, No. 375a] where it had been resent, undiagnosed, for ten years in three Zürich lakeside bathing places. In non-sensitized ersons there is an unnoticeable primary reaction and in sensitized persons an itching econdary reaction. The latter is described from over 500 clinical and 27 experimental cases. A description and classification of this cercaria from *Limnaea ovata*, and of a further three inds found later by Meyer, was published by Meyer & Dubois in 1954, for abstract see [elm. Abs., **23**, No. 382b.] G.I.P.

**93—Día Médico. Buenos Aires.**

*a. PÉREZ FONTANA, V., 1953.—" Investigación de huevos de helmintos. Con especial referencia al estudio de la epidemiologia de la hidatidosis." **25** (36), 912–913.

*b. TAIANA, J. A., ARACAMA ZORRAQUIN, V. A., SCHIEPPATI, E. & BORAGINA, R. C., 1953.—" Equinococcosis pulmonar. Tratamiento quirúrgico. 124 quistes hidatidicos." **25** (50), 1282–1285.

*c. FRISANCHO, D., 1953.—" La ascaridiasis en cirugia." **25** (60), 1672–1674.

**94—Dokladi Akademii Nauk SSSR.**

a. LOGACHEV, E. D., 1953.—[On the structure and development of parenchyma in the growing sectors of cestodes.] **93** (2), 381–383. [In Russian.]

b. ASTAKHOVA, T. V., 1953.—[Influence of growth of carp on its parasite fauna.] **93** (3), 577–579. [In Russian.]

c. MARKOV, G. S. & ROGOZA, M. L., 1953.—[Age dynamics of the parasite fauna of the grass frog.] **93** (3), 581–584. [In Russian.]

(794a) Logachev, in a cytological study of the structure and development of the arenchyma of the growing region of *Taenia saginata*, comes to the conclusion that the moebocytic cellular elements are formed from the basophilic granules in the anterior region f the neck and that this process is a progressive development of cells from non-cellular struc-ures. Basophilic granules take in proteins and nucleic acids and become living matter, arising ere as a result of synthetic processes from simple matter which penetrates by osmosis from he intestine of the host through the cuticle of the neck of the tapeworm. Differentiation of ellular elements takes place in the posterior region of the neck. Cell division, both in the osterior part of the neck and in the young proglottides, is by amitosis. C.R.

(794b) Astakhova carried out a survey of the parasitic fauna in young and yearling arp. She found *Gyrodactylus elegans*, *Dactylogyrus solidus* and *D. anchoratus*, larvae of *etracotyle percae-fluviatilis*, *Tylodelphus clavata* and *Diplostomulum spathaceum*. In her pinion poor management creates favourable conditions for infection with parasites; when oung fish are kept under good conditions they rapidly eliminate the parasites or reduce them o a very small number. C.R.

(794c) The authors investigated the change in the parasitic fauna of grass frogs in relation o age. They divided the frogs according to age into tadpoles, frogs less than a year old and p to 15 mm. long, frogs less than a year old and up to 30 mm. in length, yearlings, young rogs (up to two years of age) and adult frogs (three to four years of age). Tadpoles were

found to be infected with larvae of *Tetracotyle crystallina* and *Polystoma integerrimum*. frogs less than a year old and up to 15 mm. long, were found *Rhabdias bufonis*, *Cosmocer ornata*, *Oswaldocruzia bialata* and *Diplodiscus subclavatus*. In the group of frogs up to 30 mm long were found in addition *Dolichosaccus rastellus*, *Haplometra cylindracea* and *Acanthocephal ranae*. In yearlings *Pleurogenes claviger* was also found. *Gorgoderina vitelliloba* was found frogs in the third year of life. The longevity of flukes (except *Polystoma* and *Gorgoderin* is short and there is no accumulation of these parasites with age. The conditions under whic the frogs live influence their parasitic fauna. C.

**795—Duodecim.**

*a. VANNAS, S., 1953.—" Kokeellisia tutkimuksia iilimadon vaikutuksesta silmään." [Exper mental studies on the effect of the leech on the eye.] **69** (3), 234–241.

**796—Experimental Report of Government Experimental Station for Anima Hygiene, Tokyo.**

*a. WATANABE, S., NAGAYAMA, E, & SAITO, J., 1953.—" Observations on the intermedia host of fowl cestode *Raillietina (Skryabinia) cesticillus* (Molin, 1858) Furhman." No. 2 pp. 277–287.

**797—Feldsher i Akusherka. Moscow.**

*a. PLOTNIKOV, N. N., 1953.—[*Diphyllobothrium* infection.] Year 1953, No. 4, pp. 21–2 [In Russian.]
*b. VASILKOVA, Z. G., 1953.—[Transmission of ascariasis.] Year 1953, No. 7, p. 59. [In Russian.

**798—Flygeskrift. Statens Plantevern. Oslo.**

a. FJELDDALEN, J., 1953.—" Bladål på veksthusplanter." No. 35, 4 pp.

(798a) Attacks by *Aphelenchoides ritzema-bosi* and *A. olesistus* on various plant (begonia, chrysanthemum etc.) in green-houses are described and control methods are given. S.E

**799—Folia Medica. Naples.**

*a. LENCI, G., 1953.—" Rapporti tra anchilostomiasi e tubercolosi polmonare." **36** (4), 309 319.

**800—Freyr. Reykjavik.**

a. DAVÍDSSON, I., 1953.—" Kartöfluhnúdormar." [Potato nematodes.] **48** (20/21), 336–337
b. DAVÍDSSON, I., 1953.—" Tómatahnúdormar í heitum gördum." [Tomato nematodes i hothouses.] **48** (23/24), 394–395.

**801—Gaceta Médica de México.**

a. MAZZOTTI, L., 1953.—" Método de contar los huevos de *Trichuris trichiura*, aplicable las parasitosis leves." **83** (6), 499–502. [English summary p. 502.]

(801a) Mazzotti has found that, in the city of Mexico, many of those infected with *Trichuris trichiura* show very light infections which are difficult to detect by the usua techniques for faecal examination. He describes a simple method for obtaining greate concentrations of eggs: small portions of faecal material are added to 4 c.c. of water in a tub until the volume is 5 c.c.; this is then shaken with glass beads until thoroughly broken up and one drop of the suspension is put on to a slide covered with an 18 m.m. × 18 m.m. slip and the eggs counted; multiplication by 100 gives the approximate number of eggs per gramm of faeces. S.W

**2—Gartenwelt.**

*a. NIETZKE, 1953.—" Älchen an Zierpflanzen." **53**, 407–408.

**3—Gartner-Tidende.**

a. STAUNING, A., 1953.—" Vedrørende Kartoffelál Masselikvidering." **69**, 520–521.

(803a) A Danish law which prohibits the growing, by producers of plants for sale, of atoes on parts of their land is discussed and is considered to be necessary to prevent spread he potato eelworm. S.B.

**4—Gastroenterologia. Basle.**

*a. CORAJOD, E. & FOURNEL, S., 1953.—" Les exérèses péri-kystiques dans les kystes hydatiques du foie." **80** (2/3), 139–146.

**5—Gastroenterology. Baltimore.**

a. HORTSMAN, Jr., H. A., 1953.—" Clinical aspects and diagnosis of schistosomiasis." **25** (4), 596–600. [Discussion pp. 601–602.]

**6—Glas Srpske Akademije Nauke. Odeljenje Medicinskih Nauka.**

a. SIMITCH, T., PETROVITCH, Z. & KECKAROSKA, J., 1953.—[Contribution à la connaissance des parasites intestinaux chez l'homme en Yougoslavie. II. Les parasites intestinaux chez les enfants en Macédoine.] **209** (6), 135–141. [In Serbian: French summary p. 141.]

b. SIMITCH, T. & PETROVITCH, Z., 1953.—[La question de l'identité ou de la daulité de *Hymenolepis nana* et la rôle des rongeurs dans l'infection de l'homme par ce parasite.] **211** (7), 11–20. [In Serbian: French summary p. 19.]

c. SIMITCH, T., GLADILIN, N., PETROVITCH, Z. & LEPEŠ, T., 1953.—[Contribution à la connaissance des parasites intestinaux chez l'homme en Yougoslavie. III. La faune des parasites intestinaux chez les enfants de la Métohie.] **211** (7), 109–120. [In Serbian: French summary p. 120.]

d. SIMITCH, T. & LEPEŠ, T., 1953.—[Contribution à la connaissance des parasites intestinaux chez l'homme en Yougoslavie. IV. La faune des parasites intestinaux de Bačka.] **211** (7), 121–132. [In Serbian: French summary p. 127.]

e. SIMITCH, T. & PETROVITCH, Z., 1953.—[La faune des parasites intestinaux chez l'homme en Yougoslavie. V. Les parasites intestinaux chez les enfants des écoles primaires de la Serbie.] **213** (8), 83–104. [In Serbian: French summary pp. 103–104.]

f. SIMITCH, T., RICHTER, B., PETROVITCH, Z. & LEPEŠ, T., 1953.—[La faune des parasites intestinaux chez l'homme en Yougoslavie. VI. Les parasites intestinaux chez les enfants scolaires de Bosnie et Hercegovine.] **213** (8), 105–121. [In Serbian: French summary p. 121.]

g. SIMITCH, T., RICHTER, B., PETROVITCH, Z. & LEPEŠ, T., 1953.—[La faune des parasites intestinaux chez l'homme en Yougoslavie. VII. Les parasites intestinaux chez les enfants scolaires de Dalmatie.] **213** (8), 123–133. [In Serbian: French summary p. 133.]

(806a) In this investigation the authors examined faecal specimens from 412 children Macedonia. *Ascaris lumbricoides* was present in 44·6% and *Enterobius vermicularis* in 84·4%. *enia saginata*, *Hymenolepis nana* and *Trichuris trichiura* occurred in 0·48%, 6·9% and 6% respectively. S.W.

(806b) Simitch & Petrovitch infected 30 *Citellus citellus* with *Hymenolepis nana* from n, 21 with *H. nana* var. *fraterna* from the rat and 15 with *H. nana* obtained from naturally ected *C. citellus*. All were passing eggs of *H. nana* by the end of the third week after osure. They also demonstrated that the infected *C. citellus* could be reinfected with hetero- ous and homologous strains of *H. nana* and the animals died of hyperinfection. They sider that rats and mice are of little importance in spreading *H. nana* in man, in spite of fact that man and rodents carry the same species of *Hymenolepis*. S.W.

(806c) The authors record the following helminths revealed by faecal examination of children in Métohie and by the cellophane swab technique: *Taenia saginata*, *Hymenolepis a*, *Ascaris lumbricoides*, *Enterobius vermicularis*, *Trichuris trichiura* and *Strongyloides coralis*. S.W.

(806d) Simitch & Lepeš examined the faeces of 370 persons and found *Asca lumbricoides* in 2·7%, *Hymenolepis nana* in 2·16%, *Enterobius vermicularis* in 64·3% a *Trichuris trichiura* in 21·3%. They conclude that the helminth incidence in Bačka is co siderably lower than in other parts of Yugoslavia. S.

(806e) Simitch & Petrovitch examined the faeces of 1,319 schoolchildren in Serbia a record the following helminths: *Taenia saginata*, *Hymenolepis nana*, *Ascaris lumbricoid Enterobius vermicularis*, *Trichuris trichiura* and *Trichostrongylus* sp. S.

(806f) The authors record *Hymenolepis nana*, *Ascaris lumbricoides*, *Trichu trichiura*, *Enterobius vermicularis*, *Trichostrongylus* sp. and *Taenia saginata* in schoolchildren Bosnia and Hercegovina. The faeces of 988 children were examined. S.

(806g) The authors examined the faeces of 691 schoolchildren from 14 localities Dalmatia. *Hymenolepis nana*, *Ascaris lumbricoides*, *Trichuris trichiura* and *Enterobius vermicula* were the four helminth species found. S.

## 807—Harefuah.

a. BANK, H. & GLUECKSMAN, H., 1953.—[28 cases of extrapulmonary Echinococcu **45** (8/9), 178–180. [In Hebrew.]

## 808—Harper Hospital Bulletin. Detroit.

a. MAYER, W. D. & BEITMAN, M. R., 1953.—" Trichinosis." **11** (4), 142–144.

## 809—Higiena i Sanitariya. Moscow.

a. EREMEEV, N. N., 1953.—[A helminthological investigation of the water of certain rive and canals inside a town.] Year 1953, No. 7, p. 44. [In Russian.]

(809a) Water from a river and its branches in a town was filtered and examined fo helminth eggs. Various volumes were taken at 26 points at a depth of 15-20 cm. and a distanc of 20–50 cm. from the edge. The number of eggs found varied from none in 17 litres to 1 eggs in one litre taken at a point 20–30 m. below the entry of a sewer. From one canal a five samples (0·2–3·0 litres) contained eggs and in some they numbered 30 to 33·5 per litr Of the 252 eggs collected 197 were *Ascaris*, 5 *Trichuris*, 4 *Enterobius* and 46 *Diphyllobothriu latum*. The egss were in various stages of development and the author has thus shown tha the water should not be taken for domestic use before it has been freed from helminth egg G.I.

## 810—Higijena. Belgrade.

a. BANIĆ, M. & KENDEREŠKI, S., 1953.—" Trihinoza kod ljudi i životinja." **5** (3), 205–21
b. BUJEVIĆ, A., CVJETANOVIĆ, B. & RICHTER, B., 1953.—" Prilog poznavanju problem zaraženosti djece crijevnim crvima s osobitim obzirom na utjecaj crijevnih nematoda na niv hemoglobina i krvnu sliku te opći razvoj djece." **5** (4/5), 275–293. [English summary pp. 292 293.]

(810a) The authors give the history of a case of *Trichinella* infection in a woman i Belgrade. G.I.

(810b) In Croatia the incidence of helminth infections in children in urban homes an villages averages 80%. As infestation of the environment and the standard of hygiene of th community have an essential influence on the incidence of infection, mass dehelminthizatio alone in a given area does not solve the problem because of reinfestation from neighbourin areas. Lasting success can only follow a general rise in the standard of hygiene of the whol geographical area where traffic and intercourse are highly developed. R.T.L

## 811—Hippokrates. Stuttgart.

*a. STAACK, W., 1953.—" Weitere Beobachtungen zur Sekretion des Blutegels." **24** (20), 632.

## 812—Igiene e Sanità Pubblica.

a. GALLO, G., 1953.—" Le parassitosi intestinali in provincia di Salerno." **9** (3/4), 228–235. [English, French & German summaries p. 228.]
b. TRIGGIANI, L., 1953.—" Focolaio di anchilostomiasi nel territorio del Comune di Gaeta." **9** (7/8), 515–522. [English, French & German summaries p. 515.]
c. SACCOMANNO, A., 1953.—" Per un focolaio di anchilostomiasi in provincia di Lecce." **9** (9/10), 635–648. [English, French & German summaries p. 635.]

(812a) Gallo reports the results of 5,980 faecal examinations conducted from 1941 to 1952 in the province of Salerno, Italy. Helminth ova were found in 2,961 cases. Of these, 947 showed hookworm ova. M.MCK.

(812b) The faecal examination of 207 people from the region of Gaeta in Italy, showed helminth infection in 65·7%, hookworm being present in 23·1%. The control of hookworm is discussed. M.MCK.

(812c) Although hookworm is uncommon in the Italian region of Puglia, Saccomanno found *Ancylostoma* ova in 28 out of 1,000 persons from the town of Galatina. Of ten top soil samples taken near olive presses and cesspools, two contained hookworm ova, two contained *Taenia solium* eggs and one *Trichuris trichiura* ova. Fennel and endive from ten vegetable gardens were ground and examined for ova. Two samples of the latter were contaminated, one with hookworm and one with *Taenia solium*. M.MCK.

## 813—Jaarverslag van het Proefstation voor de Bloemisterij te Aalsmeer.

a. LEFERING, T. W., 1953.—" Bestrijding van wortelaaltjes bij *Helleborus* en *Pyrethrum*." Year 1953, pp. 92–93.

(813a) *Helleborus* and *Pyrethrum* will not stand hot-water treatment. Thus to control *Pratylenchus pratensis* in their roots Systox was tried (Parathion being ineffective). Soaking in Systox at 0·01% to 1% for one to 17 hours combined with soil fumigation with D-D mixture gave promising results although the plants were not very happy in the Systox. The experiments are not yet complete. J.B.G.

## 814—Japanese Journal of Plant Protection.

*a. ICHINOE, M., 1953.—[Recent studies on root-knot nematodes.] **45**, 104–107. [In Japanese.]

## 815—Japanese Journal of Veterinary Science.

a. OHBAYASHI, M., 1953.—[The parasitic changes in the bladder caused by *Setaria*.] **15** (2), 103–108. [In Japanese: English summary pp. 107–108.]
b. NISHIYAMA, S., 1953.—[Demonstration of larvae of *Habronema* worms in skin ('summer sore') lesions in horses.] **15** (4), 211–226 [In Japanese: English summary p. 226.]

(815a) Ohbayashi describes two cases of invasion of the bladder wall by *Setaria*. In the first a mature female *S. equina* was found under the mucous membrane of the bladder of a four-year-old stallion and there were no pathological lesions. In the second an immature worm was found in one of a large number of nodules in the bladder of a cow; in this case there was severe haemorrhage, the whole bladder wall was much thickened and there was considerable oedema. S.W.

(815b) Nishiyama examined specimens from skin lesions in 25 horses from Kyushu, Hiroshima Prefecture and Tokyo. In four from Kyushu, larvae of Habronema were demonstrable; although no larvae were found in the other specimens the lesions were so similar that the author is of the opinion that all were probably caused by Habronema. S.W.

**816—Jornal de Pediatria. Rio de Janeiro.**

*a. COUTINHO, J. O., AMATO NETO, V. & CAMPOS, R., 1953.—" Incidencia do *Strongyloides stercoralis* em criancas de São Paulo. Inquerito coprológico efetuado pelos processos de Faust e col., de Hoffman, Pons e Janer e de Baermann." **18** (7), 203–211.

**817—Journal de Chirurgie. Paris.**

*a. BOURGEON, R. & PIETRI, H., 1953.—" Les cholerragies consécutives aux interventions pour kystes hydatiques du foie. Moyens d'étude et physiopathologie." **69** (5), 389–409.

*b. PÉREZ FONTANA, V., 1953.—" Le traitement chirurgical du kyste hydatique du poumon par la methode uruguayenne ou extirpation du périkyste." **69** (8/9), 618–629.

**818—Journal of the Colorado-Wyoming Academy of Science.**

a. SLUSS, R. L., 1953.—" Observations on a tapeworm coenurus from the muscles of the jackrabbit." [Abstract of paper presented at 24th Annual Meeting of the Colorado-Wyoming Academy of Science, May 1–2, 1953.] **4** (5), 58.

(818a) Sluss records that 50 (24 males and 26 females) out of 157 *Lepus californicus* collected within 60 miles of Colorado Springs, Colorado, were infected with coenuri. Immature rabbits were not infected. The coenuri varied in size from 10 mm. to 80 mm. in length by 5 mm. to 40 mm. in width and contained an average of 250–300 scolices, each possessing 30 to 40 hooks. They could not be specifically identified and the definitive host was not found. S.W.

**819—Journal of the Faculty of Radiologists. London.**

a. LATHAM, W. J., 1953.—" Hydatid disease." **5** (1), 65–81; (2), 83–95.

**820—Journal of the Florida Medical Association.**

a. KELLEY, E. P., 1953.—" Treatment of creeping eruption." **40** (4), 242–245.

(820a) Creeping eruption due to migrating hookworm larvae was effectively and inexpensively treated by hetrazan. The dose recommended is 9–10 mg. per kg. body-weight three times daily after meals for five or six days. Clinical histories of seven cases so treated are cited. R.T.L.

**821—Journal Français de Médecine et Chirurgie Thoraciques.**

*a. HOUEL, J. & DUMAZER, R., 1953.—" Aspects anatomo-radiologiques du kyste hydatique du poumon." **7** (1), 17–32.

**822—Journal of the Kanto-Tosan Agricultural Experiment Station.**

a. FUKUI, J., YARIMIZU, H., IIZIMA, K., TANAKA, T. & IZUMI, S., 1953.—[Control of the nematode (*Heterodera marioni* (Cornu) Goodey) on soy-bean. I. Effect of DD (dichloropropan-dichloropropylene) as worm killer.] No. 4, pp. 19–22. [In Japanese: English summary p. 22.]

b. FUKUI, J. & YARIMIZU, H., 1953.—[Control of the nematode (*Heterodera marioni* (Cornu) Goodey) on soy-bean. II. Residual effectiveness of DD (dichloropropane-dichloropropylene) application.] No. 4, pp. 23–26. [In Japanese: English summary p. 26.]

(822a) D-D mixture and chloropicrin were tested for the control of root-knot eelworms attacking soya beans in pleistocene soil. D-D proved very effective when injected at 3 c.c. per sq. ft. and less so at 3 c.c. per 4 sq. ft. Chloropicrin was inferior to D-D. M.T.F.

(822b) Following up the work reported in the previous paper [see abstract No. 822a above] it is recorded that there was a good residual effect of D-D mixture the next year but not in the second year after application, except in the early stages of plant growth. Chloropicrin had less residual effect than D-D. D-D is considered very expensive for practical use by farmers. M.T.F.

**823—Journal of the Medical Association of the State of Alabama.**

*a. GILL, D. G., 1953.—" Care can prevent trichinosis." **22** (10), 274–276.

**824—Journal of Nervous and Mental Diseases.**

a. HURD, R. W., 1953.—" Focal cerebral injury due to *Trichinella spiralis*." **117** (6), 526–536.

(824a) Hurd reports in detail a case of trichinelliasis in which the neurologic symptoms made diagnosis extremely difficult. The patient was admitted to hospital with a provisional diagnosis of poliomyelitis and it was not until five days later that an eosinophilia of 25% indicated the correct diagnosis; a history of eating raw pork about three weeks previously gave support to this. On the 14th day in hospital a complement fixation test for trichinelliasis with a provisional titre of 30 was obtained and the intradermal test was mildly positive; on the 28th day complement fixation showed a titre of 800. No trichinae were obtained on deltoid biopsy. A table summarizes other cases of cerebral injury caused by trichinelliasis and Hurd discusses the means of infection, differential diagnosis, diagnostic procedures and prognosis. There is an extensive bibliography. S.W.

**825—Journal of Pharmacy and Pharmacology. London.**

a. BECKETT, A. H. & JOLLIFFE, G. O., 1953.—" Ascaridole studies. Part II. An examination of the iodimetric and polarographic methods of determination of ascaridole." **5** (11), 869–875. [Discussion p. 875.]

**826—Journal de Radiologie et d'Electrologie.**

a. GONDARD, L., 1953.—" Images d'ascaris dans le grêle." **34** (3/4), 256.
b. DURANCEAU, G. & JOURDAN, A., 1953.—" Cysticercose. Présentation d'un cas." **34** (5/6), 383–384.
c. DURANCEAU, G. & CHIOZZA, P., 1953.—" Les filaires calcifiées." **34** (5/6), 384.

**827—Journal of Thoracic Surgery.**

a. SUSMAN, M. P., 1953.—" Hydatid disease as it affects the thoracic surgeon." **26** (2), 111–127. [Discussion pp. 127–130.]

**828—Kagaku. Tokyo.**

a. HARADA, F., 1953.—[Oecological studies of hookworm larvae.] **23** (4), 215–216. [In Japanese.]

**829—Karakulevodstvo i Zverovodstvo.**

a. LYUBIMOV, M. P., 1953.—[Treatment of strongylosis in reindeer with phenothiazine.] **6** (2), 72–75. [In Russian.]
b. POTEKHINA, L. F., 1953.—[Ways of infecting fur animals with alariosis.] **6** (3), 75–76. [In Russian.]
c. NOVIKOV, V. K. & DUBNITSKI, A. A., 1953.—[Dicrocoeliasis in stags.] **6** (4), 78. [In Russian.]
d. SOPELCHENKO, M. I., 1953.—[Examination of the soil for the presence of *Dictyocaulus* larvae in the semi-desert steppes of Uzbekistan.] **6** (6), 51–52. [In Russian.]
e. DUBNITSKI, A. A., 1953.—[A new worm disease of Ussuri raccoons—the metacercaria.] **6** (6), 57. [In Russian.]

(829a) Lyubimov recommends phenothiazine against helminths in *Cervus canadensis asiaticus* and *C. nippon*. Doses are given for calves, young females and males and adult females and males. The phenothiazine was mixed with food and treatment was spread over twelve days. Good results were obtained. C.R.

(829b) Potekhina describes the life-history of *Alaria alata*. The first intermediate hosts are *Planorbis planorbis* and *P. vortex* and the second intermediate hosts are tadpoles. When metacercariae obtained from frogs were fed to dogs, silver foxes and red foxes, the adults produced eggs after 38, 35 and 45 days. To avoid infection animals should be prevented from eating frogs. C.R.

(829c) The occurrence of *Dicrocoelium dendriticum* in the liver of *Cervus canadens asiaticus* is reported. The authors believe that this fluke is of pathogenic importance to th animal. C.I

(829d) Sopelchenko examined 180 samples of soil from the semi-desert steppes o Uzbekistan and found only in one case one larva of *Dictyocaulus* at a depth of 5–10 cm., wit the temperature of the soil at 33·3°C. In his opinion the soil is not the source of distributio of *Dictyocaulus* in sheep. C.I

(829e) Dubnitski, on post-mortem examination of Ussurian raccoons, found adu *Alaria alata* and *Uncinaria stenocephala* in the small intestine and larvae of *Toxocara can* in the kidneys. In addition he also found metacercariae of *A. alata* in the subcutaneous tissu in intermuscular fat and in the parenchyma of the pancreas. These metacercariae were fe to a puppy and 36 days later eggs of *A. alata* were passed in the faeces. C.I

**830—Khirurgiya. Moscow.**

*a. GAMOV, V. S., 1953.—[Surgical therapy of multiple pulmonary echinococcosis.] Year 195 No. 10, pp. 19–23. [In Russian.]
*b. VAKHRAMEEV, P. I., 1953.—[Two cases of complicated echinococcosis of the liver.] Yea 1953, No. 10, p. 83. [In Russian.]
*c. ANTELAVA, N. V., 1953.—[Diagnosis of pulmonary echinococcosis.] Year 1953, No. 11 pp. 6–9. [In Russian.]
*d. GANICHKIN, A. M., 1953.—[Echinococcosis of the heart.] Year 1953, No. 11, pp. 14–17 [In Russian.]

**831—Khirurgiya. Sofia.**

*a. BAEV, B. & VASILEV, I., 1953.—[Echinococcosis of the extrahepatic bile ducts.] **6** (5), 272 278. [In Russian.]
*b. VASILEV, I., 1953.—[Case of echinococcosis of the thyroid gland.] **6** (5), 317–319. [I Russian.]
*c. ZAKHARIEV, G., 1953.—[Perforation of echinococcal cyst into the abdominal cavity.] **6** (7 409–413. [In Russian.]
*d. RUMENOV, I., 1953.—[Unusual complication in suppurative pulmonary echinococcosis. **6** (7), 433–436. [In Russian.]

**832—Kitakanto Medical Journal.**

*a. MATSUYAMA, T., 1953.—" On mild hookworm infection." **3** (2), 55.

**833—Klinicheskaya Meditsina. Moscow.**

a. AKHREM-AKHREMOVICH, R. M., 1953.—[Clinical aspects and therapy of opisthorchiasis. **31** (10), 10–16. [In Russian.]

**834—Konevodstvo.**

a. NOSIK, A. F. & ADAMETS, G. D., 1953.—[Sodium silico-fluoride and sodium fluoride a anthelmintics against the principal helminth infections of horses.] Year 1953, No. 3, pp. 21–2 [In Russian.]

(834a) Although single large doses of sodium silicofluoride and fluoride used as anthel mintics in horses often produce toxic effects, they do not ensure high anthelmintic efficacy Nosik & Adamets treated 72 horses with small doses and found that 0·01 gm. sodium fluorid per kg. body-weight, given twice a day during three days, was practically 100% effectiv and 0·03 gm. per kg. body-weight of sodium silicofluoride mixed with food was 100% effectiv against *Parascaris equorum*. These drugs in similar doses were also effective against *Oxyur equi* and, according to preliminary results, against *Habronema* spp. C.I

**835—Landwirtschaftliches Wochenblatt für Westfalen und Lippe.**

*a. HEDDERGOTT, H., 1953.—" Achtet auf das Kartoffelälchen!" **110A**, 1422–1423.

**836—Lantmannen.**

a. SALLNÄS, T., 1953.—" Leverflundran—en dyrbar parasit." **37** (43), 967–970.

**837—Liječnički Vjesnik.**

*a. BOTTERI, I., 1953.—" O nekim problemima endemične ehinokokoze kod nas." **75** (3/4), 99–101.

**838—Lyon Chirurgical.**

a. BOURGEON, R., PIETRI, H. & GUNTZ, M., 1953.—" L'ouverture des kystes hydatiques du foie dans les voies biliaires." **48** (5), 535–545. [English summary p. 545.]

**839—Magyar Állatorvosok Lapja.**

*a. NEMESERI, L., 1953.—[Epidemiology of trichinelliasis.] **8**, 49–53. [In Hungarian.]

**840—Majallatu-'Zzira'Ati'l-'Iraqiyah. Baghdad.**

a. ABDUL-RASSOOL, A., 1953.—[Verminous bronchitis.] **8** (3), 721–727. [In Arabic: English summary p. 10.]

(840a) This is a popular article on lungworm disease in sheep. It outlines the symptoms and post-mortem picture and the way animals become infected and stresses particularly the part good husbandry can play in its control in Iraq. S.W.

**841—Marseille Chirurgical.**

*a. VIGOUROUX, 1953.—" Kyste hydatique du cerveau chez une enfant de 10 ans. Présentation de l'opérée." **5** (1), 97–100.
*b. VERNEJOUL, H. DE, 1953.—" Kystes hydatiques du coeur." **5** (2), 176–180.

**842—Medical Annals of the District of Columbia.**

*a. KELLY, V. C. & SCOTT, R. B., 1953.—" Incidence of pinworm and ascaris infestation in Negro children in the Washington area." **22** (7), 351–352.

**843—Medical Bulletin of the U.S. Army Far East.**

*a. PAN, C., RITCHIE, L. S. & HUNTER, III, G. W., 1953.—" Reinfection and seasonal fluctuation of *Ascaris lumbricoides*." **1** (3), 49–51.
*b. RITCHIE, L. S., PAN, C. & HUNTER, III, G. W., 1953.—" A comparison of the zinc sulfate and the formalin-ether (406th MGL) technic." **1** (7), 111–113.

(843b) [An authors' abstract of this paper appeared in *J. Parasit.*, 1952, **38** (4, Sect. 2), Suppl. p. 16. For abstract see Helm. Abs., **21**, No. 230s.]

**844—Medicamenta. Madrid.**

a. ALCALÁ SANTAELLA, R. & ALCALÁ, F., 1953.—" Tres problemas fundamentales en los quistes hidatídicos de riñón." **11** (232), 169–173.

**845—Medicina. Madrid.**

a. RUIZ, M., 1953.—" Ileo biliar de curso benigno producido por un *Ascaris lumbricoides* situado parte en duodeno y parte en coledoco." **21** (I(3)), 169–174.
b. LALLEMAND CARPIO, A. & GASALLA CHACÓN, J. M., 1953.—" Reacciones de Wassermann inespecíficas en líquido cefalorraquídeo a propósito de un caso de cisticercosis cerebral." **21** (I(6)), 336–356.

(845b) [This paper also appeared in *Med. colon.*, 1953, **21**, 248–268. For abstract see Helm. Abs., **22**, No. 231a.]

## 846—Medicina Colonial. Madrid.

a. APARICIO GARRIDO, J. & PRIETO LORENZO, A., 1953.—"Nuestra experiencia sobre el tratamiento de la anquilostomiasis." **22** (5), 482–486.

(846a) Aparicio Garrido & Prieto Lorenzo have treated over 250 patients for hookworm infection in Spain. They evaluate the anthelmintics which proved satisfactory and summarize the methods of treatment. Carbon tetrachloride was the most efficient; tetrachlorethylene, being less toxic, was the drug most used by the authors; thymol required too many repetitions of treatment to be useful; chenopodium oil was used with caution; benzene hexachloride gave good results and was non-toxic. M.MCK.

## 847—Medicine and Laboratory Progress. Cairo.

*a. MEGALLI, P. H., 1953.—"Bilharzia treatment with special indication to anthiomaline." **14** (2), 37.

## 848—Medicinski Glasnik. Belgrade.

*a. KRSTIĆ, B. H., 1953.—"Atebrinska intoksikacija pri uklanjanju pantljičara." [Atebrin intoxication in therapy of tapeworm infection.] **7** (1), 17–18.

*b. PROTIC, M. F., 1953.—"Akutni abdomen kod dece uzrokovan prisutsvom askarida." [Acute abdomen in child due to the presence of *Ascaris*.] **7** (5/6), 182–183.

## 849—Meditsinskaya Parazitologiya i Parazitarnie Bolezni. Moscow.

*a. SOPRUNOV, F. F. & SOPRUNOVA, N. Y., 1953.—[Purification of soil from pathogenic Nematoda and their larvae with soil fungi from the family Didymozoophaga.] Year 1953, No. 1, pp. 85–91. [In Russian.]

*b. GULINA, N. S., 1953.—[A case of extraction of tapeworm with duodenal catheter.] Year 1953, No. 1, pp. 98–99. [In Russian.]

*c. MERKUSHEV, A. V., 1953.—[Trichinelliasis in wolves and foxes.] Year 1953, No. 1, pp. 99–100. [In Russian.]

*d. ANON., 1953.—[Interregional conference on malaria and helminthiasis control.] Year 1953, No. 1, pp. 101–103. [In Russian.]

e. PARIBOK, V. P., 1953.—[The anthelmintic effect of saturated and unsaturated hydrocarbons.] Year 1953, No. 3, pp. 248–252. [In Russian.]

f. KOVALEV, N. E., 1953.—[New data on the treatment of experimental opisthorchiasis with hexachloroethane and with carbon tetrachloride.] Year 1953, No. 3, pp. 253–257. [In Russian.]

g. STANOVOVA, T. I., POKROVSKI, V. I. & TSEIDLER, S. A., 1953.—[Dehelminthization with oxygen in infectious diseases.] Year 1953, No. 3, pp. 260–262. [In Russian.]

h. CHUKHRIENKO, D. P., 1953.—[Intestinal obstruction due to ascariasis.] Year 1953, No. 3, pp. 262–268. [In Russian.]

i. ZHUKOV, N. M., 1953.—[Comparative data on effectiveness of dehelminthization of the population in two regions in 1950 and 1951. Preliminary communication.] Year 1953, No. 3, pp. 268–271. [In Russian.]

j. MYASOEDOV, V. S., 1953.—[The infection of fish in the Tomsk region with metacercariae of *Opisthorchis felineus*.] Year 1953, No. 3, pp. 271–272. [In Russian.]

k. KAMALOV, N. G., 1953.—[Human filariasis.] Year 1953, No. 3, pp. 276–277. [In Russian.]

l. GOTSADZE, D. K. & ZIMIN, I. A., 1953.—[A case of trichinelliasis in a bear.] Year 1953, No. 3, p. 278. [In Russian.]

m. SHELYAPINA, T. S., 1953.—[A method of preservation of eggs of *Taenia nana*.] Year 1953, No. 3, p. 278. [In Russian.]

n. PROSTOKOVA, T. N., 1953.—[Two cases of murine hymenolepiasis in children.] Year 1953, No. 3, pp. 278–279. [In Russian.]

(849e) Of the six unsaturated hydrocarbons tested for their anthelmintic action on cats infected with *Toxocara mystax* the most effective was the nonene-nonene fraction. Three of four infected cats were cured. With the heptene-heptene fraction cure was effected in two out of four cats. Four compounds of the saturated series were also tested but all were less effective than those of the unsaturated series. G.I.P.

(849f) The effect of treatment of opisthorchiasis in dogs was studied by attaching a terminal fistula to the bile-duct by Pavlov's method. After the operation the dogs were infected

with 600 to 6,000 metacercariae. No worms passed with the bile before treatment. Hexachlorethane given in doses of 0·05–0·5 gm. per kg. body-weight to five dogs caused 36·8% to 97·3% of the worms to pass in the bile; contrary to Plotnikov (1941), even small doses of 0·1–0·2 gm. were effective. 0·05 ml. of carbon tetrachloride per kg. body-weight administered to four dogs removed 9·9% to 32% of *Opisthorchis*. The worms continued to pass from 9 to 31 days after these treatments. G.I.P.

(849g) The authors report on the oxygen treatment of 98 cases with various symptoms, 71 of which were passing *Ascaris* eggs. Six of the negative cases did pass eggs after treatment. In these 77 cases the efficacy obtained was 86%. The apparatus used is illustrated. The authors conclude that oxygen therapy is well tolerated by the patients, can be applied repeatedly and can be used for the treatment of many infectious diseases. G.I.P.

(849i) Zhukov emphasizes the importance of a systematic examination of the population in populated areas and the subsequent treatment of infected persons and gives the results of such measures in two villages. The treatment of helminth infected cases in 1950 had reduced the number of infected persons in 1951 by 12% in one village and by 7·8% in the other. G.I.P.

(849j) Out of 485 fish caught in four rivers of the Tomsk region, 81 were infected with metacercariae of *Opisthorchis felineus*. The dependence of the infection on the age of fish was observed for ide and dace from the river Ob' and it was found that both the extent and the intensity of the infection increased with the increasing age of the fish. G.I.P.

(849k) Data from the literature of cases of filariasis associated with elephantiasis in Russia are shortly discussed and Skryabin's opinion that *Dirofilaria repens* is now the only species causing filariasis in man in Russia is quoted. G.I.P.

(849l) The authors report *Trichinella* infection of bear meat examined at a meat control station in Sukhami and assume the presence of a natural focus of trichinelliasis in Abkhaz, Georgian SSR. G.I.P.

(849m) Shelyapina states that the methods described in literature for preserving of helminth eggs are not applicable to *Hymenolepis nana* eggs and recommends a solution of 5 ml. of pure formalin, 5 ml. of glycerin and 100 ml. of distilled water, which she has been using successfully for a year. The material is kept in room conditions in a covered test-tube and used as required for smears. The usual method of mixing stools with water and filtering is not recommended. G.I.P.

(849n) *Hymenolepis* sp. (the rodent form) is reported from two boys, one resident in the town of Osipenko, Ukraine, the other brought to the town from the surrounding country. Both were cured with pumpkin seeds. G.I.P.

**850—Mémoires de l'Académie de Chirurgie. Paris.**

a. GOÑI MORENO, I., 1953.—"A propos du traitement des kystes hydatiques du poumon." **79** (10/12), 267–271.
b. LIARAS & HOUEL, 1953.—"Diagnostic radiologique et traitement du kyste hydatique du poumon." **79** (19/20), 495–501.
c. KOURIAS, B., 1953.—"Modalités nouvelles du traitement chirurgical des kystes hydatiques du foie rompus dans les bronches." **79** (31/32), 810–812.

**851—Mémoires de l'Institut Scientifique de Madagascar. Série A. Biologie Animale.**

a. GERLACH, S. A., 1953.—" Recherches sur la faune des eaux interstitielles de Madagascar III. Sur quelques nématodes libres des eaux souterraines littorales de Madagascar." **8**, 73–86. [German summary p. 86.]

b. GRJEBINE, A. & MENACHÉ, M., 1953.—" Enquête malacologique et hydrobiologique sur les mollusques vecteurs de bilharziose dans le district d'Ambositra." **8**, 87–110.

(851a) Gerlach has studied the nematode fauna of the subterranean waters of the littoral zone at Faux-Cap in the south of Madagascar; these waters are in contact with fresh water and the sea and have only been studied to date in Europe. Eight species of free-living eelworms were present of which six were identifiable and four new. *Xenocyatholaimus delamarei* n.g., n.sp. is isolated from other members of the family by the structure of the cuticle which forms smooth unbroken rings and is decorated with ten well marked longitudinal lines. *Synonchiella annulata* n.sp. is distinguished from *S. orcina*, the most nearly related species, by the unbroken cuticular annulations and the smaller number of pre-anal papillae. *Chromaspirina madagascariensis* n.sp. closely resembles *C. thieryi* but may be distinguished by the much longer cephalic bristles. *Procamacolaimus tubifer* n.sp. is differentiated from *P. acer* by the buccal stylet which is completely fused with the dorsal wall of the buccal cavity. S.W.

(851b) Grjebine & Menaché have investigated the mollusc fauna of a number of aquatic habitats in the district of Ambositra which has long been known as a focus of schistosomiasis mansoni. They list the snails found in streams, rivers, irrigation ditches and gulleys and water courses and in rice fields at various stages of cultivation and give the number infected with schistosome, paramphistome or other cercariae. Data on the physical and chemical properties of the waters, their flora and fauna, variations in temperature and their rates of flow are also given. *Biomphalaria pfeifferi* was found in all the habitats but running water was its only permanent habitat; only two out of a total of 489 *B. pfeifferi* and none of the other species collected at 24 points were infected with *Schistosoma mansoni*. Paramphistome cercariae occurred in *B. pfeifferi*, *Planorbis crassilabrum*, *P. trivialis*, *Limnaea natalensis* and *Bulinus liratus*. Eggs of the local strain of *S. mansoni* could hatch at 25·5° C., which is lower than the minimum temperature usually required, and consequently all waters of this region could be contaminated in the hot season and most even in the cold season. The authors outline control measures and are of the opinion that, as well as chemical methods, the introduction of *Gambusia affinis* into streams, irrigation ditches and rice fields would be worth while. S.W.

**852—Minerva Dermatologica. Turin.**

*a. BESSONE, L., 1953.—"Contributo allo studio delle espressioni dermatologiche da parassitosi intestinali. II. Terapia dell'oxiuriasi." **28** (10), 261–264.

**853—Minerva Farmaceutica. Turin.**

*a. BORIO, P., 1953.—" Azione antielmintica della papaina e del di-feniacetato di piperazina (D.P.P.)." **2** (4), 141–142.

**854—Mississippi Doctor.**

*a. JONES, F. E., EYLES, D. E. & SMITH, C. S., 1953.—" Intestinal parasitism in a plantation population of the Yazoo-Mississippi delta." **31** (3), 85–87.

**855—Mitschurin-Zirkel.**

*a. ZIMMERMANN, H. E., 1953.—" Nematodenbekämpfung durch Fruchtfolge." **2**, 542–546.

**856—Mitteilungen des Naturwissenschaftlichen Museums der Stadt Aschaffenburg.**

a. NOLL, W. & STAMMER, H. J., 1953.—"Die Grundwasserfauna des Untermaingebietes von Hanau bis Würzburg mit Einschluss des Spessarts." Neuen Folge, No. 6, 77 pp.

(856a) Noll & Stammer report on a study of the fauna of 280 wells and springs in the lower Maine valley. A list is provided of 181 of these water-sources where important finds

were recorded and under each is given full details of all species recovered. This is followed by a systematic section which lists the 32 nematode species found. The two new species (*Onchullus nolli* and *Monhystera stadleri*) have already been described elsewhere by Goffart.

A.E.F.

**857—Monatsschrift für Kinderheilkunde.**

a. GOETERS, W., 1953.—" Biologie und Verbreitungsmechanismus der kindlichen Enterobiasis vermicularis (Oxyuriasis)." **101** (2), 43–47.

**858—Münchener Medizinische Wochenschrift.**

a. MOTSCHMANN, H., 1953.—" Kasuistischer Beitrag zur Kenntnis der menschlichen Leberegelkrankheit (Fasziolosis)." **95** (20), 579–580.

**859—Mundo Agrícola. Barcelona.**

*a. LOPEZ ARANGURAN, J., 1953.—" La triquinelosis del cerdo, una enfermedad parasitaria que puede transmitirse al hombre." **5** (48), 26.

**860—Nachrichtenblatt der Bayerischen Entomologen. Munich.**

*a. MENDHEIM, H., 1953.—" Insekten als Zwischenwirte von Helminthen nebst einigen Bemerkungen über neue Zwischenwirte des Rattenbandwurms." **2**, 69–70.

**861—Neurologia, Neurochirurgia i Psychiatria Polska.**

*a. SZLAMINSKI, Z., 1953.—" Wyniki operacyjnego leczenia wagrzycy śródczaszkowej." [Result of surgical treatment of cysticerciasis.] **3** (4), 383–384.

**862—Nisshin Igaku.**

*a. ITO, J., 1953.—[The effects of temperatures on the eggs of *Schistosoma japonicum* I and II.] **40** (10), 569–573; **41** (2), 88–95. [In Japanese: English summary.]

**863—Nordisk Medicin.**

a. STEINERT, R., 1953.—" Paragonimiasis." **50** (39), 1340–1341.

**864—Norin Jinho.**

*a. ISODA, M., 1953.—[About disease of domestic animals parasitized by *Limnaea pervia* or *L. truncatula* (*Fasciola hepatica* Linné).] **12** (11), 26–29. [In Japanese.]

**865—[Nuova Agr. Milan.]**

*a. ORDANINI, P., 1953.—[Modern methods of control of root nematodes.] **1**, 1–2, [In Italian.]

**866—Nurseryman and Seedsman. London.**

*a. KRAUSE, W. G. C., 1953.—" Leaf eelworm is a major pest." **117**, 1382–1384.

**867—Orvosi Hetilap.**

*a. NYÁRI, I. & SZMUK, I., 1953.—" Schistosomiasis hazánkban kórismézett és gyógyult esete." [Diagnosed and cured case of schistosomiasis in Hungary.] **94** (12), 331–332.

*b. GYONGYOSI, J., 1953.—" Cysticercosis cerebri esete." **94** (33), 920–922.

**868—Parazitologicheski Sbornik.**

a. BIKHOVSKAYA-PAVLOSKAYA, I. E., 1953.—[Trematode fauna of birds of western Siberia and its dynamics.] **15,** 5–116. [In Russian.]
b. DUBININA, M. N., 1953.—[Cestodes of birds nesting in western Siberia.] **15,** 117–233. [In Russian.]
c. DUBININA, M. N., 1953.—[Specificity of *Ligula* in various phases of the life-cycle.] **15,** 234–251. [In Russian.]
d. DUBININ, V. B., 1953.—[Parasitic fauna of Muridae and its changes in the Volga delta.] **15,** 252–301. [In Russian.]

(868a) In this survey of the trematode fauna of birds from the Barabinsk forest plains in western Siberia, 2,137 birds belonging to 14 orders were examined and 41.2% found infected. 112 species of trematodes were found and are discussed, and a new genus and three new species described. *Longicollia echinata* n.g., n.sp. was found in *Capella gallinago*. The new genus differs from other genera of the Echinostomatidae in having a characteristic body form with the narrow anterior part 1½ to 3 times as long as the wider posterior part. The collar carries a single row of 17 spines and a group of five smaller ones on each of two ventral lobes. The cirrus sac does not reach the posterior edge of the ventral sucker. *Echinoparyphium paracinctum* n.sp. found in *Vanellus vanellus*, *Limosa limosa*, *Tringa glareola* and *Nyroca ferina* differs from *E. cinctum* in having 43 equally sized collar spines and a smaller cirrus sac which does not reach beyond the posterior edge of the ventral sucker. *Renicola nana* n.sp. from *T. totanus* and *V. vanellus* is characterized by its localization in the kidney ducts and the small size of the mature worms which are 0·58–0·74 mm. × 0·28–0·37 mm. In *Diplostomum kronschnepi* n.sp. from *Numenius arquata* the vitellaria extend forward beyond the ventral sucker, which is larger than the oral one, while in *D. spathaceum* the suckers tend to be equal and the vitellaria hardly extend to the ventral sucker. The synonymy of a number of species is discussed and a list of parasites under their hosts is given. There are new host records and many species are reported for the first time from Russia. The dependence of the trematode fauna on the age and food of the host and its harmful influence in poultry farming are discussed.

G.I.P.

(868b) In the Barabinsk forest plains, of 2,137 birds from 14 orders examined, 53·5% were infected with cestodes. 114 species including ten new species were found. *Hymenolepis monoposthe* n.sp. is described from *Bucephala clangula* and *Netta rufina* and also includes seven specimens from *N. rufina* which were mistakenly identified by Dubinina in 1950 as *H. arcuata*. This new species resembles *Diploposthe laevis*, but has only one cirrus per segment. The author uses *Hymenolepis* in the sense of Fuhrmann (1932) and *Dicranotaenia* as its synonym. *H. formosa* n.sp. from *Nyroca ferina* and *N. fuligula* differs from *H. jägerskiöldi* in having smaller hooks (0·034–0·038 mm. long), a very long protrusible rostellum, a short cirrus sac and a straight uterus. *H. quasioweni* n.sp. found in *Philomachus pugnax*, *Calidris temminckii*, *Tringa totanus* and *T. glareola* differs from *H. oweni* only in the position of the hooklets, which are in the centre of the suckers. *Drepanidotaenia spinulosa* n.sp. from *Netta rufina* is differentiated from other species of this genus by the presence of spines on the suckers and the length of the rostellar hooks (0·088–0·1 mm.). *Aploparaksis endacantha* n.sp. from *Anser acuta* is characterized by the presence of numerous hooklets in the cavity of the suckers. *Diorchis* (*Diorchis*) *tringae* n.sp., found in *T. totanus*, differs from *D.* (*D.*) *sobolevi* in the length of the rostellar hooks (0·036–0·039 mm.) and in the possession of a much shorter cirrus sac and a bilobed ovary. *Anomotaenia paramicrorhyncha* n.sp. from *T. stagnatilis*, *T. totanus*, *T. glareola* and *T. nebularia* resembles *A. microrhyncha* in scolex characters, but has only 12 to 15 testes, a protruding genital bursa and the length of the blade of the hooks is equal to that of the base. *A. hydrochelidonis* n.sp. found in *Hydrochelidon leucoptera* and *Larus minutus* differs from *A. micracantha* in the shape and size of the hooks which are 0·017–0·02 mm. long. *A. riparia* n.sp. in *Riparia riparia* is distinguished from other *Anomotaenia* species from Passeriformes by the hooks, which are 0·056–0·058 mm. long, 56 to 60 in number and similar in shape to those of *Dilepis undula*. *D. glareola* n.sp. from *T. glareola* resembles *D. limosa* in the shape of hooks, which however are almost one third the size. The species also differ

in the morphology of the ripe proglottides. The author lists the parasites under their hosts and discusses the dependence of the cestode fauna on the food and the migration of birds, and the significance of cestodes in poultry farming. G.I.P.

(868c) Dubinina has studied the phases of the life-cycles of *Ligula intestinalis* and *Digramma interrupta* in the Kutuluks reservoir, where liguliasis was prevalent among 50·2% of *Abramis brama*. The plerocercoid phase is the most specific and in Kutuluks can develop only in *A. brama* and possibly (*L. intestinalis*) in *Alburnus alburnus*. The infective stage is reached in 12 to 14 months. Adults are less specific; experimental infection of seven bird species from different orders, a cat and a dog was successful in all cases. In birds *L. intestinalis* reached maturity in 45 to 50 hours and *D. interrupta* in 50 to 55 hours. In mammals, with a body temperature lower by 3°C., the worms become mature in 57 to 60 hours and then remained in the host for up to 114 hours; in birds they remained for up to 95 to 100 hours. The time of the development of eggs was the same for all species of *Ligula*. In daylight at 24°C. to 28°C. the development lasted five to six days and at 15°C. to 18°C. eight to nine days. Hatching of coracidia was stimulated by light and these, in the infective stage, survived for one to one-and-a-half days. The usual hosts for the procercoids of *L. intestinalis* and *D. interrupta* were *Diaptomus glacilis* and *Cyclops strenuus*. Experimental infection succeeded also for *Acanthocyclops viridis* and *Eucyclops serrulatus*. Six species of cyclops type were experimentally infected with *L. colymbi*. G.I.P.

(868d) Six murid species and *Crocidura suaveolens* from the Volga delta were examined and 144 parasite species, including 56 helminth species were found. The incidence, intensity of infection and hosts are given for each parasite. *Alaria alata*, *Mesocestoides lineatus* and *Syphacia obvelata* are considered in somewhat greater detail. The change of the parasite fauna due to irrigation is discussed. In the wetter maritime section of the delta the fauna was poorer (28 worm species) than in the central section (51 species). G.I.P.

**869—Pediatria Polska.**

*a. JAROSZYNSKA-WEINBERGER, B., 1953.—"Próby śródskórne w rozpoznaniu glistnicy robaczkowej u dzieci." [Intradermal tests in diagnosis of *Ascaris lumbricoides* in children.] **28** (5), 483–488.

**870—Pediatrics. Springfield.**

a. SMITH, M. H. D. & BEAVER, P. C., 1953.—"Persistence and distribution of *Toxocara* larvae in the tissues of children and mice." **12** (5), 491–497. [Spanish summary pp. 496–497.]

(870a) Two hundred embryonated eggs of *Toxocara canis* were administered to two mentally defective children and similar doses were given to a group of mice. The children remained clinically asymptomatic but developed eosinophilia. In one of the children the eosinophils rose from 0%–3% to 52% within a month and gradually declined to 15%, thirteen months after infection; in the other the eosinophils rose from 3%–6% to 25% in one month and to 45% at the end of three months. After six and ten months the counts were 42% and after one year fluctuated between 17% and 31%. There was a noticeable rise in the eosinophil count within a few days of the administration of hetrazan, followed by a sharp fall and a quick return to the pre-treatment level. The mice showed abundant larvae in the liver, lungs and kidneys and many in the muscles and brain, within two weeks of infection. A mouse killed ten months after infection with 200 embryonated eggs gave 152 living larvae of which 120 were found in the brain, 17 in the liver and 15 in the carcass. There were also several cysts containing dead larvae and in some the cysts were empty. In a mouse killed after one year, there were 32 larvae living free in the brain and spinal cord, 27 encapsulated living larvae, 16 encapsulated dead larvae and 13 empty cysts. There were also 15 complete larvae and portions of 13 others in 90 sections of the frontal lobes, thalamus and pons. These sections represented only one twentieth of the brain. These findings in children and mice emphasize the potential danger of dogs and cats as household pets. R.T.L.

## 871—Pharmazie. Berlin.

a. HOFMANN, H. & HELD, U., 1953.—" Die Nebenwirkungen der Anthelmintica." **8** (1) 24–28.
b. IRMSCHER, H., 1953.—" Der Blutegel im Arzneischatz der modernen Krankenhausapotheke." **8** (5), 405–410.
c. MARUYAMA, M., 1953.—" Die Bestimmung von Ascaridol im Oleum Chenopodii. II Bestimmung durch Ultrarot-Absorptions-Spektroskopie." **8** (7), 595–596.

(871a) Hofmann & Held present a review of the literature—based on 141 references—on the side effects of anthelmintics. Among the substances dealt with are male fern extract santonin, chenopodium oil, carbon tetrachloride and tetrachlorethylene. A.E.F.

(871b) Apparently leeches are coming into favour again in Germany and Irmscher who is chief pharmacist at a Dresden municipal hospital, takes this opportunity to review the subject. He discusses the history of the medicinal use of leeches, their zoology, breeding and care, and the technique of application. The two species officially approved in Germany are *Sanguisuga medicinalis* and *S. officinalis*. Among the conditions in which leeches are applied with success at the Dresden hospital are: disorders of menstruation, angina pectoris, hypertonia apoplexy, inflammation of the prostate gland and ear affections such as otitis media and mastoiditis. A.E.F.

## 872—Phytiatrie-Phytopharmacie. Paris.

*a. RITTER, M., 1953.—" Essais sur l'emploi du D.D. pour la lutte contre l'anguillule des racines (*Heterodera marioni* Cornu) dans les cultures maraichères en France." **2**, 49–57.

## 873—Phytopathologische Zeitschrift.

a. MÜHLE, E., 1953.—" Über einen weiteren Fall gleichzeitigen Auftretens von *Dilophospora* spec. mit einem Nematoden." **20** (3), 311–314.

(873a) Mühle reports the finding of leaf-galls, principally near the bases of the leaves, on *Calamagrostis villosa* and *C. arundinacea*. The galls contained large numbers of nematodes, which were identified by Goffart as *Ditylenchus graminophilus* Goodey (apparently a new record for these hosts) and also, in every case, typical spores of *Dilophospora* sp. Mühle considers that the fungi, which are usually in close association with nematodes, are probably transported by them. A.E.F.

## 874—Policlinico (Sezione Pratica). Rome.

a. TIMPANO, P., 1953.—" Per la lotta contro l'anchilostomiasi. (Nòta di clinica, di profilassi, di terapia.)." **60** (8), 273–277. [English & French summaries p. 277.]

## 875—Polski Tygodnik Lekarski. Warsaw.

*a. KUŹMICKI, R., 1953.—" O wartości leczenia zarobaczenia tasiemcem stezonym roztworem soli karlsbadzkiej podawanym przez zgłebnik dwunastniczy." [Evaluation of treatment of taeniasis with concentrated Carlsbad salt solution by duodenal intubation.] **8** (50), 1704–1705.

## 876—Polskie Archiwum Medycyny Wewnętrznej.

*a. PENSON, J., NIELUBSZYC, S. & MOSZCZYŃSKA, Z., 1953.—" Zmiany w jakósciowym składzie białek osocza krwi i opadanie krwinek w przebiegu włośnicy." [Modifications of qualitative content of serum proteins and erythrocytes sedimentation during trichinosis.] **23** (5), 683–688.

## 877—Postgraduate Medicine. Minneapolis.

a. BUMBALO, T. S. & GUSTINA, F. J., 1953.—" The treatment of pinworm infection in children." **14** (1), 83–86.
b. NEUMAN, Z., 1953.—" Surgical treatment of hydatid cyst of the liver." **14** (4), 304–305.

**878—Praktický Lékař. Prague.**

*a. TESAŘ, J., 1953.—" Smrt po atebrinu při léčeni taeniasy." **33** (2), 36–37.

**879—Praxis und Forschung für den Fortschrittlichen Landwirt.**

a. LANGE, B., 1953.—" Kartoffelnematoden—ein schwieriges Problem." **5** (12), 255–257.

(879a) Lange gives an account of the life-history of the potato root eelworm (*Heterodera rostochiensis*), the means of spread and the damage to the potato crop. Control by chemicals is briefly discussed and the value of crop rotation is stressed and illustrated by figures for cyst counts. M.T.F.

**880—Prensa Médica Argentina.**

a. LASALA, A. J., FINOCHIETTO, R. & MASLO, P., 1953.—" Hidatidosis hepatica Sobre quistectomías." **40** (39), 2573–2577.
b. SURRACO, L. A., 1953.—" El quiste hidatídico pelviano en la mujer. La topografía retro-vésico-genital." **40** (39), 2609–2613.
c. MEEROFF, M., 1953.—" Tratamiento de la ascaridiasis." **40** (40), 2700–2704.
d. LONGO, O. F. & DARAIO, M., 1953.—" Distoma del colédoco. Importancia de la colangiografía operatoria." **40** (43), 2910–2911.
e. MEEROFF, M., 1953.—" Tratamiento de la teniasis." **40** (48), 3256–3262.

**881—Priroda. Moscow.**

a. GUSEV, A. V., 1953.—[New fauna of animal parasites.] Year 1953, No. 9, p.120. [In Russian.]

(881a) During recent years many new helminths, including 110 new species of monogenetic trematodes, have been described from fish in the Amur river basin in Russia. *Dactylogyrus* is represented here by 93 species. The number of monogenetic trematode species found in the Amur is higher than that found in all fresh waters of Eurasia. [The names of the parasites and hosts are not given in this paper.] G.I.P.

**882—Proceedings of the Hawaiian Academy of Science.**

a. BONNET, D. D., 1953.—" Filariasis in recent Samoan immigrants." [Abstract.] 28th Annual Meeting (1952–53), pp. 4–5.
b. ALICATA, J. E., 1953.—" Control of the swine kidney worm, *Stephanurus dentatus* (Nematoda, Strongyloidea)." [Abstract.] 28th Annual Meeting (1952–53), pp. 8–9.

(882a) Bonnet records that 922 out of 928 immigrants into Hawaii from American Samoa were examined for microfilariae and 160 were found to be positive. As the local *Culex* permits the microfilariae from Samoan carriers to develop to the infective stage an endemic focus could become established. To avoid this carriers were given a three-week course of hetrazan and control measures were intensified against the potential vectors. S.W.

(882b) [A full account of this work appears in *Amer. J. vet. Res.*, 1953, **14**, 563–570. For abstract see Helm. Abs., **22**, No. 297c.]

**883—Proceedings of the Kansas Veterinary Medical Association.**

*a. FOLSE, D. S., 1953.—" Practical parasite control." **49**, 69–74.

**884—Proceedings of the Louisiana Academy of Science.**

a. WEBER, T. B., 1953.—" The effects of $P^{32}$ on the longevity of the miracidia of *Paramphistomum microbothrioides*." **16**, 43–55.

(884a) Weber describes in detail the investigations of the effect of radioactive phosphorus ($P^{32}$) on the miracidia of *Paramphistomum microbothrioides*. Eggs were collected from adult flukes and placed in Standard Reference Water (controls) or in Standard Reference Water to which $P^{32}$ (in the form of potassium hydrophosphate) with activities ranging from 0·625

to 7·5 μc per ml. was added. The *p*H was kept constant and the eggs incubated at 31°C. t 33°C. The average longevity of the control miracidia was 11.2 hours with a maximum of 1 hours. The average longevity was decreased by slightly less than one hour by activities o 0·625 μc and 1·25 μc per ml. and by about three hours by 2·5 μc; it was increased by abou one hour by 5·0 μc and 6·25 μc and by more than three-and-a-half hours by 7·5 μc per m The maximum longevity was decreased one hour by 1·25 μc and two hours by 2·5 μc and wa increased one hour by 5·0 μc and 6.25 μc and two hours by 7·5 μc. S.W

## 885—Proceedings of the National Academy of Sciences, India. Section B.

a. PREMVATI, 1953.—"Two new furcocercous cercariae from the snail, *Melanoides tuber culatus* (Müller)." **23** (1/3), 29–38.

b. PREMVATI, 1953.—"*Cercaria cruciata* n.sp. (xiphidiocercaria) from the snail, *Melanoide tuberculatus* (Müller)." **23** (1/3), 39–45.

(885a) *Cercaria magnacrestata* n.sp. from *Melanoides tuberculatus* in the Lucknow district is a furcocercous cercaria with a mid-dorsal crest. The penetration glands are arranged in two groups with one pair in the anterior and five pairs in the posterior half of the body. It has three pairs of flame cells. Eye-spots are absent. The sporocysts, which are small oval or round structures varying from 0·14 mm. × 0·12 mm. to 0·24 mm. × 0·215 mm., show refractile granules of a brownish yellow colour. Each mature sporocyst contains two to three full formed and a few developing cercariae. *Cercaria quadriglandula* n.sp. from the same host is non-ocellate, and has a muscular pharynx and long furcal rami. It is characterized by the presence of two pairs of head glands in the region of the anterior protrusible organ and by the arrangement of the two pairs of penetration glands, one being anterior to and the other being behind the ventral sucker. There are spines on the tail. The flame cells in the body number nine pairs and in the tail two pairs. R.T.L

(885b) *Cercaria cruciata* n.sp. from *Melanoides tuberculatus* in the Lucknow district is a very small xiphidiocercaria characterized by lobulation of the inner wall of its excretory bladder and by the presence of 12 pairs of flame cells. There are three pairs of lobed penetration glands situated anterior to the ventral sucker. The anterior pair is coarsely granular and the posterior pair is finely granular. The sporocysts are small and oval and have no birth pore. R.T.L

## 886—Proceedings of the Oregon Seed Growers League.

*a. JENSEN, H. J., 1953.—"The root-knot nematode disease of potatoes." 13th Annual Meeting pp. 79–80.

## 887—Proceedings of the Oregon State Horticultural Society.

*a. JENSEN, H. J., 1953.—"Nematode diseases of strawberry and vegetables." 45th Annual Meeting, pp. 87–88.

## 888—Proceedings of the Royal Society of Arts and Sciences of Mauritius.

a. COWPER, S. G., 1953.—"The role of the freshwater mollusc *Bulinus* (*Pyrgophysa*) *forskali* Ehrenberg, in the transmission of *Schistosoma haematobium* (Bilharzia disease) in Mauritius." **1** (3), 259–267.

(888a) Cowper describes three critical laboratory experiments in which *Bulinus forskali* collected in Mauritius were exposed to miracidia of *Schistosoma haematobium*. Large numbers of forked-tailed cercariae in every way typical of those of *S. haematobium* were in the first experiment observed 30 days after infection, in the second experiment after 30 days and upwards and in the third experiment after 35 days. Three mice were infected with these cercariae and coupled pairs of apparently immature *S. haematobium* were recovered from each. These laboratory tests confirm Adams' earlier work in Mauritius. The epidemiological evidence is less convincing for although the incidence of schistosomiasis in man in Mauritius has not

eclined, the numbers and distribution of *B. forskali* appear to have dropped considerably nce the 1945 cyclone and the introduction of anti-malarial drainage schemes. In certain calities, e.g. Argy, where the schistosome incidence is high, careful search failed to reveal ny *B. forskali*. The possibility that a second vector occurs in Mauritius cannot be ruled out. R.T.L.

**889—Proceedings. United States Livestock Sanitary Association.**

a. ANDREWS, J. S., SIPPEL, W. L. & JONES, D. J., 1953.—" Clinical parasitism in cattle in the southeast." 57th Annual Meeting (1953), pp. 228–238.
b. U.S. LIVESTOCK SANITARY ASSOCIATION, 1953.—" Report of Committee on Parasitic Diseases." 57th Annual Meeting (1953), pp. 239–243.
c. SUSSMAN, O. & HENDERSHOTT, R. A., 1953.—" Man, money and pigs." 57th Annual Meeting (1953), pp. 322–325.

(889a) Helminth diseases were rare in cattle autopsied at the Coastal Plain Experiment tation, Tifton, Georgia before 30th June 1950: 6% were found with helminth diseases in 950–51, and 11% and 17% respectively in the next two years. This increase is apparently ue to poor farm management and to a greater susceptibility of cattle imported from other reas to infection with trichostrongyles. The case reports and worm counts are given of 14 ovines autopsied and originating from ten farms in Georgia. About 5% of the 1,900 cattle n these farms died as a result of the outbreaks. Seven species of worms were considered esponsible. The available anthelmintics were inefficient. Only screening of the gut contents s reliable in diagnosing clinical parasitism. M.MCK.

(889b) Parasites of cattle, sheep and pigs are discussed generally and preventive and ontrol measures are reviewed. M.MCK.

(889c) Sussman & Hendershott conclude that the lack of enforcement of laws prohibiting he feeding of uncooked garbage to pigs in the U.S.A. results from deference to business nterests. M.MCK.

**890—Przegląd Lekarski.**

a. STRYJECKA-USTUPSKA, A., 1953.—" Obraz morfologiczny krwi w chorobie robaczej." [Morphological picture of the blood in helminthiasis.] **9** (6), 148–154.
b. KUŹMICKI, R. & DZIĘCIOŁOWSKI, Z., 1953.—" Leczenie nosicieli tasiemca nieuzbrojonego (*Taeniarhynchus saginatus*) atebryną podawaną przez zgłębnik dwunastniczy." **9** (10), 254–256.
c. PRZYBYŁKIEWICZ, Z. & KOSTRZEWSKI, J., 1953.—" Odczyny serologiczne i skórne w raciborskiej zarazie włośnicy." [Serological and cutaneous reactions during an epidemic of trichinosis in Raciborz.] **9** (10), 257–258.

(890b) *Taenia saginata* infection in 35 persons was treated with 1 gm. of atebrin dissolved n 100 ml. of 1% sodium bicarbonate intubated into the duodenum and followed after one hour y 500 ml. of 6% magnesium sulphate. Patients were treated in the morning after receiving carbohydrate-rich diet on the previous day and a laxative (250 ml. of the magnesium sulphate olution) in the evening. 31 of the patients passed dead worms with scolices. The results re better than those obtained by oral dosing and the patients stood the treatment well. Of 00 cases thus treated in two hospitals, two showed serious side effects. As advised by Grott, he tolerance of the liver to atebrin is increased when 30–50 gm. of sugar and 200–300 mg. f vitamin C are taken on the day before dosing. G.I.P.

(890c) [The information given in this paper is the same as that which appeared in *Medycyna Doswiadczalna i Mikrobiologia*. Warsaw, 1950, **2**, p. 168. For abstract see Helm. Abs., **19**, No. 678a.]

**891—Psychiatrie, Neurologie und Medizinische Psychologie. Leipzig.**

*a. KUFS, H., 1953.—" Über einen durch operativen Eingriff geheilten Fall von Cysticercosis cerebri und über den *Cysticercus tenuicollis*." **5** (1/2), 13–15.

**892—Ptitsevodstvo.**

*a. POTEMKINA, V. A., 1953.—[A method of using phenothiazine in ascaridiasis in hen
8, 28–29. [In Russian.]
*b. RIBALTOSKI, O. V., 1953.—[Squash seed meal and bran freed from fat in treatment of gee
for tapeworms.] 8, 29–30. [In Russian.]
*c. GARKAVI, B. L., 1953.—[Eradication of *Tetrameres* infestation on a duck raising farm
8, 32. [In Russian.]

**893—Publicaciones del Museo de Historia Natural "Javier Prado". Lima.**

a. PARRA ORMEÑO, B. E., 1953.—" Estudio de los nuevos helmintos intestinales de *Lagidium peruanum*." Serie A (Zoolgía), No. 11, 27 pp.
b. PARRA ORMEÑO, B. E., 1953.—" *Phalacrocorax bougainvillii* 'Guanay' un nuevo huespe para *Cyathostoma sphenisci* Baudet." Serie A (Zoología), No. 14, 7 pp.
c. BENDEZÚ, L. S., 1953.—" Identificacion de *Haemonchus contortus* en carneros nacidos e la sierra del Peru." Serie A (Zoología), No. 15, 9 pp.

(893a) The author presented part of this work at the 13th Annual Meeting of th Association of Southeastern Biologists when she described the new cestode from *Lagidium peruanum* as *Paranoplocephala threlkeldi* [for abstract see Helm. Abs., **21**, No. 713c]. Furthe work indicated that this should not have been assigned to *Paranoplocephala* and it is transferre to *Perutaenia* n.g. and described and figured. [This transfer to *Perutaenia* has also bee published in *J. Parasit.*, 1953, **39**, 252–255. For abstract see Helm. Abs., **22**, No. 110b *Helminthoxys velizi* n.sp. is described and figured from the same host. In the male the spicul is curved at its distal end and dilated at the proximal end, the gubernaculum is T-shape there are two cuticular bosses and one pair of pedunculated post-cloacal papillae. Th vestibule in the female is large. S.W

(893b) *Cyathostoma sphenisci*, which has not previously been recorded from any hos other than *Spheniscus humboldtii*, is reported from *Phalacrocorax bougainvillii* in Peru. It i described and illustrated and the measurements compared with those of specimens from *S. humboldtii*. S.W

(893c) The author reports the finding of *Haemonchus contortus* in four sheep from th sierra of Peru. He tabulates the measurements of his specimens and compares them with thos recorded by other workers. This confirms the existence of haemonchiasis in flocks of shee in Peru but there is at present no information on its incidence. S.W

**894—Quarterly Bulletin of Sea View Hospital, New York.**

a. LECOS, E., 1953.—" Treatment of pulmonary hydatid cysts. An experience with over 50 cases in Greece." **14** (2), 72–75. [Spanish summary p. 77.] [Discussion by L. R. Davidso pp. 75–77.]

(894a) Lecos reviews the treatment of pulmonary hydatid disease and concludes fro his experience that modern lobectomy offers little or no advantage over older collapse method (by artificial pneumothorax or phrenic nerve crush) or drainage Jacobeus. Discussing th paper Davidson considers the various means of diagnosis and is of the opinion that surgica excision is the only rational treatment of hydatid cyst of the lung. S.W

**895—Radiologia Clinica. Basle.**

a. COCCHI, U., 1953.—" Ein Fall von Zystizerkose der Lunge und Leber." **22** (1), 54–57.

(895a) Cocchi describes a case of cysticerciasis cellulosae in which numerous cysts wer present in the lungs and liver. The differential diagnosis of the condition is briefly discusse and the paper is illustrated by three X-ray photographs. S.W

**396—Records of the Dominion Museum. Wellington, N.Z.**

a. JOHNSTON, T. H. & EDMONDS, S. J., 1953.—" Acanthocephala from Auckland and Campbell Islands." **2** (2), 55–61.

b. JOHNSTON, T. H. & MAWSON, P. M., 1953.—"Parasitic nematodes and trematodes from Campbell and Auckland Islands (Cape Expedition)." **2** (2), 63–71.

(896a) Three known species of *Corynosoma* are redescribed from seals on the Campbell and Auckland Islands in the Subantarctic, viz., *C. bullosum* from *Mirounga leonina*, *C. semerme* from *Otaria hookeri*, *C. australe* from *Hydrurga leptonyx* and *Otaria hookeri*. *Corynosoma* sp. from *Otaria forsteri* and *Hydrurga leptonyx* were poorly preserved and could not be identified with certainty. Specimens of *C. clavatum* occurred in *Phalacrocorax colensoi*. R.T.L.

(896b) Brief descriptions are given of helminths collected from seals, albatrosses, silver gulls, penguins and rock cod by New Zealand Government officials stationed on the Auckland and Campbell Islands during the second world war. The only trematode mentioned is *Pseudobenedenia nototheniae*, an external parasite of *Notothenia colbecki*. It is suggested that a re-examination of the types of *Lophocotyle cyclophora* Braun may show that the original description is incorrect and that *P. nototheniae* is a synonym of *L. cyclophora*. Of the nematodes one is new, viz., *Contracaecum eudyptes* n.sp. from the penguins *Eudyptes cristatus* and *Megadyptes antipoda*: it is distinguished by the form of the lips which have very narrow lateral flanges, each lip has a pair of antero-laterial tooth-like projections and the interlabia are as long as the lips. R.T.L.

**397—Records of the Indian Museum.**

a. DAS, E. N., 1953.—" On some interesting larval stages in the life-history of a new species of the acanthocephalan genus *Ar[h]ythmorhynchus*, from the frog, *Rana tigrina* (Daud) from India." **51** (1), 39–49.

b. DATTA, M. N., 1953.—" On a new species of acanthocephalan parasite from fishes of Bombay." **51** (1), 51–55.

c. CHAUHAN, B. S., 1953.—" Studies on the trematode fauna of India. Part I. Subclass Monogenea." **51** (2), 113–208.

d. CHAUHAN, B. S., 1953.—" Studies on the trematode fauna of India. Part II. Subclass Aspidogastrea." **51** (2), 209–230.

e. CHAUHAN, B. S., 1953.—" Studies on the trematode fauna of India. Part III. Subclass Digenea (Gasterostomata)." **51** (2), 231–287.

f. CHAUHAN, B. S., 1953.—" Studies on the trematode fauna of India. Part IV. Subclass Digenea (Prosostomata). (A revision of Hemiuroidea from the Indian region)." **51** (2), 289–393.

(897a) Das describes the internal and external changes occurring in the development of *Arhythmorhynchus tigrinus* n.sp. of which numerous larval stages were found in *Rana tigrina* in India. The morphology will be described in a separate paper. No adults were found. Das concludes that the frog is the first intermediate host and that amphibians are also the first intermediate hosts for *Centrorhynchus* species. He compares the names used previously for immature forms of acanthocephalans and points out where confusion has arisen. The development of palaeacanthocephalans is similar to that of archiacanthocephalans. The proboscis, however, becomes functional during an acanthella stage in the Palaeacanthocephala which have been studied, whereas in the Archiacanthocephala the proboscis becomes functional after metamorphosis. M.McK.

(897b) Datta figures and describes *Serrasentis chauhani* n.sp. from *Psettodes erumei* and *Lutianus johnii* in Bombay seas. This is the first species of *Serrasentis* to be recorded in the East. Datta gives a table comparing its chief characters with those of related species. It is distinguished from *S. lamelliger*, *S. sagittifer* and *S. socialis* by its body size (8·625 mm. × ·552 mm. in the male), by the number of circles (16–20) of hooks on the proboscis, by the number of hooks in each circle (14–16) and by the presence of 22 ventral semicircles of 12–26 hooks each. M.McK.

(897c, d, e, f) In these four studies of the trematode fauna of India, Pakistan, Burma and Ceylon, Chauhan gives a brief diagnosis for each systematic category, keys for the various taxonomic units and, where obtainable, a representative diagram for each species recorded in the literature. Each part has a separate bibliography. The intention being to fill a gap in the Fauna of British India series. R.T.L.

(897c) Part I deals with the 30 known Indian species of Monogenea. As the clamp structure of *Protomicrocotyle* is so similar to that of *Bilateracotyle* these genera should remain in Protomicrocotylinae. If, however, Sproston's view is accepted that *Protomicrocotyle* belongs to Vallisiinae the name Protomicrocotylinae will be misleading and *Bilateracotyle* will have to be placed in Pilateracotylinae, a new subfamily of Microcotylidae. It is also suggested that *Vallisiopsis* be transferred from Vallisiinae to Gastrocotylidae. A new subfamily Priceinae is made for *Pricea*, *Thoracocotyle* and *Lithidiocotyle*. R.T.L.

(897d) Part II deals with the Aspidogastrea of which five species are known to occur in the Indian region. Aspidogastridae is divided into three new subfamilies, viz., (i) Macraspisinae for *Macraspis* and *Stichocotyle*; (ii) Cotylaspisinae for *Cotylaspis*, *Cotylogaster*, and *Lissemysia*; and (iii) Aspidogasterinae for *Aspidogaster*, *Lobatostoma* and *Lophotaspis*. R.T.L.

(897e) Part III deals with the 28 known species of Gasterostomata. R.T.L.

(897f) Part IV is a revision of Indian Hemiuroidea. This section opens with an historical review of the taxonomy of Trematoda, a brief discussion of the evolution and interrelationships in the Platyhelminthes, and a consideration of the 34 Indian species of Hemiuridae which are distributed among eight subfamilies of which Ahemiurinae is new for *Ahemiurus* n.g., with *A. karachii* (Srivastava, 1941) n.comb. as type and only species. Chauhan replaces his earlier *Lecithochirium polynemus* and *L. acutus* by *L. polynemi* nom.nov. and *L. acutum* nom.nov. Finally it is proposed to split Digenea into Prosostomata and Gasterostomata, and Prosostomata into two suborders, viz., (i) Preprosostomata nom.nov. for the family Haplosplanchnusidae nom.nov. (for Haplosplanchnidae) with Haplosplanchnusinae n.subfam. for *Haplosplanchnus* Looss, 1902 and *Laruea* Srivastava, 1939, and Ahaplosplanchnusinae n.subfam. for *Deradena* (Linton, 1910) as emended by Chauhan (but no representative of *Deradena* has yet been found in the Indian region); (ii) suborder Prosostomatida nom.nov. for the rest of the Prosostomata. R.T.L.

## 898—Report. British Columbia Agronomists' Association Conference.

*a. BOSHER, J. E. & NEWTON, W., 1953.—" The nematode diseases of potatoes." 7th (1952), p. 75.

## 899—Report of the Commonwealth Scientific and Industrial Research Organization, Australia.

a. AUSTRALIA. COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION, 1953.—" Fifth Annual Report for the year ending 30th June, 1953." 5th (1952–53), 191 pp. [See pp. 39–40, 56–59, 62.]

(899a) *Simlimnea subaquatilis* has been identified as the molluscan intermediary of *Fasciola hepatica* in all the mainland States of Australia. The infective larvae and the male and female of *Haemonchus contortus* in cattle and in sheep are morphologically distinct and probably represent two species. The anthelmintic efficiency of phenothiazine is related to particle size. When this exceeds 25–30 $\mu$ most of the parasites survive. Several commercial preparations contain a high proportion of coarse particles. Tests against *Syphacia* in mice indicate a region of maximum anthelmintic activity between +600 and +800 mV oxidation potential. It would appear that the anthelmintic effect of phenothiazine is attributable to its ability to form relatively stable semi-quinones. 1-8-dihydroxyanthraquinone and 1-2-dihydroxyanthraquinone proved highly effective against nematodes in the large bowel of sheep, viz.,

*esophagostomum venulosum*, *O. columbianum*, *Chabertia ovina* and *Trichuris ovis*, when 1–2 gm. ere administered into the rumen and 2·5–5 gm. were effective against *Haemonchus contortus*. tudies on resistance to trichostrongylosis revealed that this is influenced by the number nd the frequency of the larvae administered. Resistance of sheep to *H. contortus* is not ssociated with the self-cure phenomenon nor with the titre of complement-fixing antibodies. n account is given of the epidemiological observations in Tasmania and Western Australia nd New South Wales. The occurrence of *Trichostrongylus rugatus* in cattle is recorded for he first time. Mass hatching of *Trichostrongylus* ova but not of *Haemonchus contortus* can occur dense pasture limiting evaporation. The vertical distribution of larvae on *Phalaris* clover correlated with microclimatic conditions and is reversed as between dry and wet periods. R.T.L.

**00—Report of the Department of Agriculture, Jamaica.**

a. WRIGHT, J., "Report of the Veterinary, Livestock and Pasture Divisions. A. Veterinary Division." Year 1953, pp. 39–40.

(900a) "Internal parasites were commonly a cause of unthriftiness and death in stock ut control is a matter of education of the farmer. Phenothiazine often proved disappointing s a medicament." R.T.L.

**01—Report of the Minister for Agriculture. Dublin.**

a. ANON., 1953.—" Annual report, 1952–53." 22nd (1952–53), 195 pp. +Appendices [89] pp. [See pp. 97, 157, [16–17].]

(901a) The Parasitological Section of the Veterinary Research Laboratory of the Depart- ient of Agriculture of the Republic of Ireland reports on the 2,903 faecal samples examined uring 1952–53. The Albert Agricultural College tested 2,291 soil samples from 2,279 acres or eelworm cysts and 116 samples of soil from nurseries growing bulbs for export. The ugar-beet eelworm has not been detected in 100 samples of soil taken from fields in which his crop has been grown intensively. During the year cereal root eelworm was found to a onsiderable degree over a wide area of the country. R.T.L.

**02—Review of Gastroenterology.**

a. ECKERLE, W. J., 1953.—" Common sense management of enterobiasis." **20** (12), 883–892.

**03—Revista Brasileira de Gastroenterologia.**

*a. GARCIA, M. F., MATTOS FILHO, A. DE & BURGER, H., 1953.—" A acção tenífuga do ácido diiodofenilpropiónico." **5** (6), 616–622.

**04—Revista Brasileira de Oftalmologia.**

a. GONÇALVES, D., 1953.—" Quiste hidático na órbita." **12** (2), 267–272. [Discussion pp. 272–274.]

**05—Revista Chilena de Higiene y Medicina Preventiva.**

*a. SOTOMAYOR DIAZ, R., ALVAREZ MARTINEZ, M. & ZIPPER AGRAGÁN, J., 1953.—" Contribución al estudio de la hidatidosis en Chile. Aspectos epidemiológicos y accion educativa en las Comunas de Lanco y Panguipulli (Provincia de Valdivia)." **15** (3/4), 91–102.

**06—Revista Chilena de Pediatría.**

*a. FANTA NUÑEZ, E., 1953.—" Estudio comparativo de la eficacia del 'hetrazan', santonina y hexylresorcinol en el tratamiento de la ascaridiasis en el niño." **24** (8), 284–289.
*b. MAZA, V. DE LA, 1953.—" Tratamiento de algunas enteroparasitosis de el niño." **24** (9), 349–355.

**907—Revista Clínica Española.**

a. ALÉS REINLEIN, J. M. & ARJONA TRIGUEROS, E., 1953.—" Reacciones serológica en el diagnóstico del quiste hidatídico." **50** (1/2), 5–7. [English, French & German summarie p. 7.]

b. ROIZ NORIEGA, M., 1953.—" Estudio radiológico y radioterapia de la equinococosis ósea. **51** (4), 236–240. [English, French & German summaries p. 240.]

(907a) The authors describe the results obtained when 73 cases of hydatid infection were tested with three antigens, namely, hydatid fluid, extract of hydatid membrane and extract of cysticercus. More positive reactions were obtained when all three were used than with the classical Weinberg reaction, the former method giving 83% positive and the latter 56%. The test, however, was less specific and infection with some intestinal helminths or cysticerci gave false positives. No falsely positive reactions were observed in 255 patients with other diseases. S.W.

(907b) Roiz Noriega describes a case of a hydatid cyst of the bone which he treated successfully with roentgen rays and recommends that this method of treating osseus hydatid should be more widely used. S.W.

**908—Revista Cubana de Pediatría.**

a. PASCUAL GISPERT, J., 1953.—" Oxyuros." **25** (2), 73–87.

**909—Revista Española de las Enfermedades del Aparato Digestivo y de la Nutrición.**

a. FERNÁNDEZ BASABE, E., MARTÍNEZ ROLDÁN, C. & PURAS, E., 1953.—" Anemia hipocrómica y macrocitaria por parasitosis con *Anguillula intestinalis* simulando la anemia saturnina." **12** (6), 585–595. [English summary pp. 593–594.]

(909a) The authors describe a case of strongyloidiasis in which the liver was enlarged and there was a hypochromic anaemia which was resistant to hepatotherapy. The intestinal flora was abnormal and a bacillus was present which was believed to be causing the gastro-jejunitis and colitis. Treatment with tetrachlorethylene combined with hepatotherapy gave excellent results and the intestinal flora became normal after the Strongyloides was eliminated. They conclude that the anaemia and abnormal responses of the liver and intestine were parasitic in origin and that the folic acid and vitamin $B_{12}$ deficiency was aggravated by the disturbance of the intestinal flora. S.W.

**910—Revista Española de Oto-Neuro-Oftalmolgía y Neurocirugía.**

a. OBIOLS, F. D., 1953.—" Cisticercosis cerebral." **12** (70), 411–421.

**911—Revista Española de Pediatría.**

*a. OROPEZA, P., 1953.—" Tratamiento de las parasitosis intestinales en el niño. Esquemas." **9** (51), 585–596.

**912—Revista do Instituto Adolfo Lutz. São Paulo.**

a. CARVALHO, J. C., 1953.—" *Aphelenchoides coffeae* em raízes de gerânio." **13,** 33–35. [English summary p. 35.]

b. CARVALHO, J. C. DE & ALVARES CORRÊA, M. O., 1953.—" A ocorência de nematóides em massa de tomate." 13, 37–43. [English summary p. 42.]

c. CARVALHO, J. C. DE, 1953.—" *Ditylenchus destructor* em tubérculo-semente importado da Holanda." **13,** 67–74. [English summary pp. 73–74.]

d. CARVALHO, J. C., 1953.—" *Mononchus*—um predador voraz." **13,** 75–81. [English summary p. 78.]

e. CARVALHO, J. C. DE & MANIERO, J., 1953.— " Algumas observações sôbre a vida do nematóide do vinagre—*Turbatrix aceti*." **13**, 83–90. [English summary p. 90.]
f. ALVARES CORRÊA, M. O., 1953.—" Incidência da esquistossomose mansoni em imigrantes oriundos de outros Estados." **13**, 91–98. [English summary p. 97.]

(912a) The male of *Aphelenchoides coffeae*, found with females on roots of *Pelargonium* sp. in São Paulo, Brazil, is described for the first time. It measures 0·455–0·525 mm. long and is similar to the male of *A. parietinus* but the lateral fields are about twice as wide, measuring 3·5–4 $\mu$ across, and there are four longitudinal striae instead of three. The testes are not reflexed and the tail is curved spirally. The female is also described and both sexes are illustrated. M.MCK.

(912b) Carvalho & Alvares Corrêa figure and describe *Panagrellus redivivus*. Numerous specimens were found by the Brazilian sanitary authorities in a cooked and partially degenerate state in tins of tomato paste imported from Argentina. M.MCK.

(912c) *Ditylenchus destructor*, so far not known to occur in Brazil, was found in a tuber among 3,000 boxes of seed potatoes imported from Holland. The female is described and figured and details of the caudal region are given from the only male that was suitable for study. The attention of the Brazilian plant quarantine service is called to the need for maintaining a rigorous inspection of the thousands of boxes of imported potatoes and the importance of prohibiting the sale of condemned material as seed. M.MCK.

(912d) In the City of São Paulo Carvalho found a male *Mononchus* (*Iotonchus*) sp. containing a fairly large nematode, and a female containing a fragment resembling a nematode tail in its intestine. Both sexes are figured and described and are considered to represent a new but not yet named species. M.MCK.

(912e) In Brazil, Carvalho & Maniero have observed the survival of *Turbatrix aceti* at different temperatures, *p*H values and oxygen tensions and compared their results with those of European workers. The nematodes survived on ice for 168 hours. In vinegar they succumbed at 41°C. within an hour and at 37°C.most of the worms had died after 20 days. When kept in vinegar and sulphuric acid at room temperature at a *p*H of 1·9 they lived up to 24 hours but at a *p*H of 1·6 all were dead in less than 24 hours. In an alkaline solution of vinegar and soda at a *p*H of 11·2 they survived well for more than 24 hours. At *p*H 11·6 they did not last longer than 24 hours. 10 ml. of infected vinegar were placed in a vertical tube with liquid Sabouraud and covered with liquid paraffin to prevent the admission of air. Some worms were still alive after six months. Infected vinegar was placed in a narrow tube which had been drawn out into a fine pipette at the bottom. The vinegar stayed in the wider part of the tube, having contact with the air below. A layer of liquid paraffin was poured in above the vinegar. The worms were unattracted by the air surface and remained active in the upper part of the tube. Attempts to transmit the worm with a *Drosophila* fly failed. Liquid and solid Sabouraud were good culture media but the best results were obtained with fruit juices, particularly grape juice, with sugar. Even in a sugar and water solution the worms were able to live and reproduce. M.MCK.

(912f) The faeces of 1,010 immigrants coming into the State of São Paulo from other States in Brazil were examined for *Schistosoma mansoni* eggs by the sedimentation method of Hoffman, Pons & Janer. The faecal suspension was left to settle for an hour and a slide 7·5 cm. × 5 cm. was examined in each case; 75·3% showed helminth eggs and larvae. *S. mansoni* eggs were found in 24·5%, *Ascaris lumbricoides* in 44·7%, hookworm in 43·8%, *Trichuris trichiura* in 14·8%, *Strongyloides stercoralis* in 2·2%, *Hymenolepis nana* in 0·6%, *Taenia* sp. in 0·6% and *Enterobius vermicularis* in 1·6%. The schistosome incidence is tabulated according to age, sex and the Brazilian State from which the immigrants came. M.MCK.

**913—Revista del Instituto Nacional de Biología Animal. Lima.**

*a. ARNAO MENDOZA, M., 1953.—"*Physocephalus sexalatus* variedad *cristatus* en *Sus scrofa domesticus*." **3** (4/5), 96–104. [English summary.]

**914—Revista Médica de Chile.**

a. VON BRAND, T., 1953.—" El estudio de la fisiología parasitaria y su importancia médica." **81** (7), 413–421.

(914a) Discussing the physiology of endoparasites of man and some other vertebrates, Von Brand notes that incomplete oxidations characterize the metabolism of most endoparasites and that the end products of the parasite's carbohydrate fermentations, whether aerobic or anaerobic, are usually more varied than the host's. Many of the end products can probably be used by the host. The excretions from metabolic processes include lactic acid (in schistosomes and *Dracunculus insignis*), volatile fatty acids (*Ascaris*, *Trichinella* larvae and *Heterakis*), higher fatty acids (*Fasciola* and *Moniezia*) and succinic acid (*Echinococcus*). In aerobic parasites, such as *Trichinella* larvae, the higher fatty acids and their glycerides represent a reserve of energy but in anaerobic parasites they probably are the end products of glycogen metabolism. Knowledge on protein metabolism is fragmentary; the predominant end products are ammonia in *Fasciola* and *Ascaris*, and urea and uric acid in *Echinococcus* and *Cysticercus tenuicollis*. Respiratory enzymes, anaemia caused by parasites and the effect of host diet and sex on the parasite are also discussed. M.McK.

**915—Revista Médica de Córdoba.**

a. CAMACHO GAMBA, J., GÓNGORA, J. & BONILLA, J., 1953.—" La uncinariasis del niño americano." **41** (5), 163–164.

b. PÉREZ FONTANA, V., 1953.—" La hidatidosis en la infancia con especial referencia a su aspecto médico-social." **41** (5), 165–166.

**916—Revista Nacional de Agricultura. Bogotá.**

*a. CADEÑOSA, R., 1953.—" Los nemátodos y su control." **47** (577), 37–38.

**917—Revista Paulista de Medicina.**

1. PUPO, P. P. & REIS, J. B. DOS, 1953.—" Evolução favorável de um caso de cisticercose cerebral observado durante 10 anos." **42** (5), 378–379.

**918—Revista de Sanidad y Asistencia Social. Caracas.**

a. PIFANO C., F., 1953.—" La resistencia del huésped vertebrado a las re-infecciones por el *Schistosoma mansoni*." **18** (5/6), 767–781. [English summary pp. 779–780.]

(918a) Pifano exposed guinea-pigs twice, thrice or four times in succession to *Schistosoma mansoni* cercariae. The intervals between exposures were from 21 days to 21 months. He records the numbers of worms found at autopsy in 19 of the guinea-pigs and the numbers found in ten guinea-pigs infected only once. Repeated exposures resulted in smaller numbers of worms, which were immature, and did not seem to increase the number of eggs deposited in the liver and rectum. M.McK.

**919—Revista de la Sanidad Militar del Perú.**

*a. BARRIOS VALAZCO, H. & GOYZUETA CARO, V., 1953.—" Parasitismo intestinal en el medio militar del Oriente Peruano como factor determinante de incapacidad temporal por hospitalizacion." **26** (73), 273–279.

## 920—Revista do Serviço Especial de Saúde Pública. Rio de Janeiro.

a. BUSTORFF PINTO, D. & DESLANDES, N., 1953.—" Contribuição ao estudo da sistemática de planorbídeos brasileiros." **6** (1), 135–167. [English summary p. 166.]

b. DIAS, C. B., BORROTCHIN, M. & RODRIGUES DA SILVA, J., 1953.—" Tratamento rápido da esquistossomose mansônica pelo tartarato de antimônio e sódio." **6** (1), 199–210. [English summary p. 209.]

c. MAROJA, R. C., 1953.—" Incidência de esquistossomose em Fordlândia, município de Itaituba, Estada do Pará." **6** (1), 211–218. [English summary p. 217.]

(920a) Bustorff Pinto & Deslandes collected 695 planorbids from 53 localities in nine States and from the capital of Brazil. They studied the species present by comparing the genitalia and kidneys with Baker's account (1945) of *Australorbis glabratus* and with other descriptions and illustrations in the literature. The planorbids fell into four groups corresponding to *A. glabratus*, *A. nigricans*, *A. centimetralis*, *A. nigrilabris* and one which was most similar to, but not identical with, *A. centimetralis* and which was recorded as *Australorbis* sp. The genitalia and kidneys are figured, their comparative morphology is tabulated and the shells are described and photographed. Under each group are listed the different names which have been used in the literature for that species. M.McK.

(920b) As a treatment for *Schistosoma mansoni* sodium antimony tartrate as a 1·3% solution was injected intravenously into 534 patients [the summaries state 543] at the rates of 7·5 mg. to 8 mg. per kg. body-weight for one day or 12 mg. per kg. given over two days. Of the 224 cases followed up 129 become negative. The one-day treatment was better tolerated. There was no improvement in tolerability or efficiency when vitamin K was administered with the antimonial. M.McK.

(920c) Faecal examinations of 202 individuals at Fordlândia, Brazil, gave 72 positive for *Schistosoma mansoni*. Forty-five of these had never left the State of Pará. M.McK.

## 921—Revue Médicale de Liège.

a. DAVID, F., 1953.—" Kyste hydatique du foie." **8** (4), 130–132.

## 922—Revue Médicale de la Suisse Romande.

a. ROCH, R. & BOYMOND, P., 1953.—" Traitement de la parasitose intestinale due aux cestodes." **73** (1), 43–50.

(922a) Roch & Boymond confirm that Villiger's technique for treating cestode infections is the most satisfactory. An emulsion of male fern containing calomel is administered by duodenal sound, and is followed by a saline purge. They give details of the preparation of the emulsion, which will keep for a week without loss of activity. Using Tubifex they demonstrated that male fern extract when it comes into contact with hydrochloric acid loses four-fifths of its potency against worms, thus accounting for the increased efficacy when given by duodenal sound. S.W.

## 923—Revue Pharmaceutique Libanaise (Lebanese Pharmaceutical Journal).

*a. ADES, J., 1953.—" Le contrôle biologique des préparations anthelminthiques." **1** (1), 14–23.

## 924—Riforma Medica.

a. COSTA, L. & NERI, M., 1953.—" Le sindromi addominali acute da ascaridi." **67** (42), 1166–1168. [English, French & German summaries p. 1168.]

## 925—Rivista di Neurologia. [Naples.

a. LEZZI, E., 1953.—" Meningismo con eosinofilia da anchilostoma." **23** (3), 343–345.

**926—Roczniki Nauk Rolniczych. Seria E. Weterynarii.**

a. PATYK, S., 1953.—"Zarobaczenie przewodu pokarmowego owiec oraz rospoznawanie hemonchozy u bydła." **66** (1), 91–107. [English & Russian summaries pp. 105–107.]

b. DOWGIAŁŁO, J., 1953.—"Obraz krwi koni wolnych od pasożytów przewodu pokarmowego i zarobaczonych oraz wpływ wieku na zarobaczenie." **66** (1), 109–130. [English & Russian summaries pp. 128–130.]

(926a) Of 150 sheep examined in 1938 from Carpathian highland pastures in the neighbourhood of Sambor, 94% were infected with nematodes, 23% with cestodes and 0·66% with trematodes. *Haemonchus contortus* was found in 2% only. In 1948–49 intradermal tests with *H. contortus* antigen were made on 175 cattle. A positive reaction was obtained in 35 cases; 25 of these gave an early specific reaction, which was confirmed in 22 cases by finding the worms on autopsy, and 10 gave a two-phase reaction which is not specific. G.I.P.

(926b) Dowgiałło has studied the influence of intestinal parasites on the blood picture of 195 horses of different ages. In those carrying intestinal parasites there was either a reduction in the number of red cells or an increase in the percentage of eosinophils which occasionally reached three to six times that normally present in uninfected horses. In adult horses with intestinal parasites the blood picture showed only slight differences even with an increase in the number of parasites present. It is pointed out that the normal blood of horses given in classical textbooks fails to take into consideration the effect of parasitism. R.T.L.

**927—Saatgutwirtschaft. Stuttgart.**

a. LAKON, G., 1953.—"Die Älchen-Fruchtgallen der Gramineen." **5** (10), 257–258.

(927a) Lakon describes nematode galls from the ears of wheat and *Agrostis capillaris* caused by *Anguina* spp. and quotes Steinbuch's description published in 1799. He compares the seed of *Agrostis alba* with nematode galls formed in its place. Galls due to the same cause are found also in *Trisetum flavescens* where, in an extreme case, they accounted for 28% by weight of the seed. Species of *Poa* and a number of other grasses are occasionally infested. M.T.F.

**928—Sad i Ogorod.**

a. NIKULINA, N. K., 1953.—[The control of nematodes.] Year 1953, No. 8, pp. 45–46. [In Russian.]

b. OLISEVICH, G. P., 1953.—[Control of phlox stem nematodes.] Year 1953, No. 9, pp. 63–64. [In Russian.]

(928a) In order to control nematode diseases in plants, Nikulina recommends that plants susceptible to nematodes should be planted every third year in the same field, and the remnants of plants (remaining plants) either fed to cattle (after scalding in boiling water) or burned or composted. Only healthy plants produced from healthy seeds should be used. In onions she recommends controlling stem nematode by using sulphur dioxide (50–60 gm. of sulphur per cubic metre of space) or a solution of formalin (1:100). Garlic should be soaked for three days in water at room temperature before planting. Nikulina stresses the importance of healthy potatoes for planting and these should be obtained only from healthy plants. In green-houses steam sterilization of soil and the use of chloropicrin (1 t. of chloropicrin per hectare) is recommended. To prevent the dissemination of disease plants from farms affected by eelworms should not be sold. C.R.

(928b) Olisevich describes the methods employed in the control of *Ditylenchus floxidis* affecting phloxes. He found that an 0·5% solution of NIUIF-100 [formula not given] used three times during 20 days in quantities of 250–300 c.c. under each plant gave the best results in the control of this pest. He also draws attention to the fact that all weeds should be destroyed, as they may serve as a source of dissemination of *D. floxidis*. Phloxes become affected in early

spring; during May nematodes are found in the stems up to 10 cm. from the ground and in the middle of June they are found higher up. Most of the nematodes were found also in the leaves, in the soil under diseased plants and in weeds growing together with phloxes. C.R.

**929—Säugetierkundliche Mitteilungen.**

a. MENDHEIM, H., 1953.—" Wurmkrankheiten bei Affen nebst einigen Bemerkungen über eine neuartige Behandlung." **1** (4), 167–170.

(929a) Mendheim lists the apes and monkeys in which he found helminths during the preceding year both by post-mortem and faecal examination. He tabulates the number of trematode, cestode, nematode and acanthocephalan species found in man and apes and the percentages common to both. The second part of the paper is a review of the use of proteolytic enzymes as anthelmintics and is illustrated by photomicrographs of sections of Ascaris which had been immersed in different concentrations of Nematolyt. S.W.

**930—Santo Tomas Journal of Medicine. Manila.**

*a. PESIGAN, T. P., 1953.—" The schistosomiasis problem in the Philippines: its public health and other aspects." **8** (1), 1–22.

**931—Saugar University Journal.**

a. PATHAK, B., 1953.—" Search for new antifilaritics." **1** (2), 195–198.

(931a) This paper is mainly concerned with the preparation of (phenyl-4-arsenious acid)-(phenyl-p-sulphonamidothiazole). The effects of this compound and of twelve others (amidino arsenoxides and piperazine derivatives containing arsenic or antimony) on microfilariae *in vitro* are tabulated. The toxicity of four of the chemicals to rats is also tabulated. Amidino arsenoxides were highly toxic but piperazine derivatives containing pentavalent arsenic were well tolerated. Piperazine-1-carbethoxy-4-acetanilide-p-arsenic acid was well tolerated and its trivalent derivative was moderately effective against microfilariae. S.W.

**932—Sborník Vysoké Školy Zemědělské a Lesnické Fakulty, Brno. Spisy Fakulty Veterinární.**

a. KONRÁD, J., 1953. —" Tetrachlorethylen jako antiparasitcum u kožišinových zvířat." **1** (1/4), 59–75. [English & Russian summaries pp. 74–75.]
b. LUCKÝ, Z., 1953.—"Průzkum parasitů ryb v povodí řeky Dyje u Podivína." **1** (1/4), 89–99. [Russian summary p. 99.]
c. ZAVADIL, R., 1953.—" Studie o systematické příslušnosti, vývoji a pathogenitě parasitů z rodu *Syngamus* Siebold, 1836." **1** (1/4), 101–121. [English & Russian summaries p. 120.]

(932a) Konrád in this paper describes the chemical and pharmacological properties of tetrachlorethylene and his tests on the toxicity of various doses to silver foxes. He treated 144 silver foxes with a dose of 1 c.c. per 5 kg. body-weight, either in gelatin capsules or by stomach tube, and noted that it was effective against hookworms in 98·5% and ascarids in 96·5% but only in 49·7% of whipworm infections. Tetrachlorethylene had no effect on coccidia. He considers that tetrachlorethylene in this dose should also be effective against these helminths in platinum foxes. C.R.

(932b) Lucký, in this survey of the parasitic fauna of fresh-water fishes (11 species) in the river Dyje near Podivína, records *Dactylogyrus vastator*, *Diplozoon paradoxum*, *Bucephalus polymorphus*, *Tetracotyle ovata*, *Caryophyllaeus laticeps*, *Triaenophorus nodulosus*, *Gryporhynchus* sp., *Acanthocephalus anguillae* and *A. lucii*, and a leech, *Piscicola geometra*. C.R.

(932c) Zavadil in this study of *Syngamus* disease paid particular attention to the development of the eggs and the hatching of the larvae and to the variation in size of the eggs of *S. trachea*. He redescribes *S.* (*Ornithogamus*) *merulae* Baylis, 1926, which is a common parasite of blackbirds in Brno. In one blackbird he found both *S.* (*O.*) *merulae* and *S. trachea*. He

also describes both male and female of a *Syngamus*, found in the blackbird, which differs from *S.* (*O.*) *merulae* and places it in the subgenus *Ornithogamus*; he does not give it a specific name although in the summary it is said that he describes a new species. He records *S.* (*O.*) *merulae* in one of the thrushes examined. The symptoms and pathogenicity are described and control measures discussed. C.R.

**933—Science. Lancaster, Pa.**

a. MACY, R. W. & MOORE, D. J., 1953.—" The relationship between *Trichobilharzia oregonensis* and *T. elvae*, etiological agents of schistosome dermatitis in the Pacific Northwest." **118** (3074), 650.

(933a) Macy & Moore have shown that *Trichobilharzia oregonensis* is distinct from *T. elvae*. Ducklings were infected with cercariae of both species. Adults of *T. oregonensis* are slightly longer than those of *T. elvae*, the diameter of the acetabulum is three to four times greater, and the seminal vesicle is followed by a structure which is probably a very elongate cirrus-sac. At least three species of the genus occur in the Pacific Northwest. S.W.

**934—Semaine des Hôpitaux de Paris.**

a. THUREL, R. & GRENIER, J., 1953.—" La cysticercose méningée." **29** (27), 1347–1349.
b. DROUET, P. L., 1953.—" Sur quelques accidents graves de l'ascaridiose chez l'adulte." **29** (54/55), 2673–2674.

**935—Semana Médica. Buenos Aires.**

a. PARODI, S. E. & ALCARAZ, R. A., 1953.—" Actividad biológica propria del embrión hexacanto de los cestodes." **103** (21), 731–733.

(935a) Parodi & Alcaraz review their studies and those of others which have shown that the hexacanth embryo releases itself from the surrounding envelopes by the action of its own hooks. M.MCK.

**936—Sicilia Sanitaria.**

*a. GALVANO, G. & LIUZZO, N., 1953.—" Cisti da echinococco a localizzazione tiroidea." **6** (4), 263–266.

**937—Sitzungsberichte der Physikalisch-medizinischen Sozietät zu Erlangen.**

a. WEINGÄRTNER, I., 1953.—" Die Nematoden des Kompostes." **76**, 86–107.

(937a) Weingärtner discusses the nematodes found in different types of decaying organic matter including carrion, cow-dung, manure heaps and compost and lists them under their habitats. The transport of nematodes by beetles living in compost etc. is described, 402 out of 1,026 beetles being found infected with a total of 17 species of nematodes. The seasonal variation in genera and species and the succession and over-wintering of nematodes is briefly outlined. Decaying fungi were also found to have a number of nematodes associated with them. *Alloionema procerum* n.sp. is described and illustrated: both male and female are unusually long and slim and a characteristic corkscrew-like appearance was frequently observed. In the male there are seven pairs of papillae of which two are pre-anal; the fifth pair are frequently close together; the spicules are small, boat-shaped, blunt and clearly knobbed and the gubernaculum is only slightly smaller than the spicules. In the female, only the anterior branch of the gonad is developed and this opens into the posteriorly placed vulva. *Diplogaster modestus* and *D. stammeri* are listed as new species and are to be described elsewhere. S.W.

**938—Sotilaslääketieteellinen Aikakauslehti. Helsinki.**

*a. VENHO, E. V. & VENHO, I., 1953.—"Leveän heismadon esiintymisestä asevelvollisilla." [The incidence of fish tapeworm carriers among servicemen.] **28** (1), 18–24.

**939—Southern Medical Journal.**

a. WILLIAMS, Jr., C., 1953.—" Echinococcus disease." **46** (11), 1104–1107.

**940—Sovetskya Meditsina.**

*a. GIMMELFARB, S. G., 1953.—[New variation of the diagnosis of enterobiasis.] **17** (11), 43–44. [In Russian.]

**941—Speculum.**

*a. UDALL, R. H., 1953.— " Anthelmintic control of intestinal parasites in research puppies." **6** (3), 11, 51.

**942—Srpski Arhiv za Tselokupno Lekarstvo. Belgrade.**

a. DAVIDOVIĆ, S., 1953.—" Ehinokok pluća. Prilog hirurškoj terapiji." [Hydatid cyst of the lung. Contribution to its surgical therapy.] **81** (1), 1–11.

b. DAVIDOVIĆ, S. & ZIVKUCIN, M., 1953.—" Povodom jednog slučaja ehinokoka levog bubrega." [A case of hydatid cyst of the left kidney.] **81** (2), 182–186.

**943—Suvremenna Meditsina. Sofia.**

*a. SLAVCHEV, S. & LOZANOVA, Z., 1953.—[Result of the treatment of enterobiasis with certain preparations.] **4** (11), 72–74. [In Russian.]

**944—Svenksa Läkartidningen.**

*a. JÖNSSON, F., 1953.—" Behandling av bandmask med quinacrine." **50** (5), 239–242.

*b. GYLLENSWÄRD, Å., 1953.—" Atebrin vid behandlingen av taenia." **50** (13), 692–693.

**945—Thorax. London.**

*a. EL MALLAH, S. H. & HASHEM, M., 1953.—" Localized bilharzial granuloma of the lung simulating a tumour." **8** (2), 148–151.

*b. TOOLE, H., PROPATORIDIS, J. & PANGALOS, N., 1953.—" Intrapulmonary rupture of hydatid cysts of the liver." **8** (4), 274–281.

**946—Tidsskrift for den Norske Laegeforening.**

*a. ARNESEN, K., 1953.—" Echinokokkcyste i lunge." **73** (4), 132–134.

*b. STEEN, E., 1953.—" Paragonimiasis; meddelelse om det forste tilfelle diagnostisert i Norge." **73** (12), 482–483.

**947—Tórax. Montevideo.**

*a. PÉREZ FONTANA, V., 1953.—" Patología y tratamiento quirúrgico del quiste hidático del pulmón." **2** (1), 7–46.

**948—Transactions of the Kansas Academy of Science.**

a. CASE, A. A., 1953.—" The occurrence of the liver fluke, *Fasciola hepatica*, in cattle from Rice County, Kansas." **56**, 108–110.

(948a) No reports of the occurrence of *Fasciola hepatica* in native cattle in Kansas have appeared in recent years but two outbreaks in Rice County, Kansas are now recorded. R.T.L.

**949—Trudi Instituta Morfologi Zhivotnikh. Moscow.**

*a. VEITZMAN, V. R., 1953.— [Development and reduction of the female genital system in *Taenia solium*.] **8**, 173–204. [In Russian.]

*b. VEITZMAN, V. R., 1953.—[Development and reduction of female genital system in *Taenia crassicollis*.] **8**, 205–215. [In Russian.]

*c. SHUMKINA, O. B., 1953.—[Embryonic development of *Hirudo medicinalis*.] **8**, 216–279. [In Russian.]

## 950—Trudi Instituta Zoologii. Akademiya Nauk Kazakhskoi SSR.

a. ORLOV, N. P., 1953.—[The problem of specificity in parasitology and its significance in the solution of practical problems.] **1,** 11–24. [In Russian.]
b. BOEV, S. N., 1953.—[A comparative morphological survey of protostrongylids (Nematoda: Metastrongyloidea).] **1,** 112–125. [In Russian.]
c. BONDAREVA, V. I., 1953.—[Role of domestic and wild carnivores in the dissemination of larval cestodes.] **1,** 126–131. [In Russian.]
d. GVOZDEV, E. V. & AGAPOVA, A. I., 1953.—[The helminth fauna of hens in Kazakhstan.] **1,** 132–138. [In Russian.]
e. BOEV, S. N., 1953.—[The systematics and morphology of pulmonary nematodes of the subfamily Neostrongylinae (Metastrongyloidea: Protostrongylidae).] **1,** 139–145. [In Russian.]
f. AGAPOVA, A. I., 1953.—[The helminth fauna of rodents in Kazakhstan.] **1,** 146–159. [In Russian.]
g. AGAPOVA, A. I., 1953.—[The helminth fauna of animals of economic importance in Kazakhstan (*Felis ocreata*, *Mustela erminea* and *M. altaica*).] **1,** 160–162. [In Russian.]
h. GVOZDEV, E. V. & MARTEKHOV, P. F., 1953.—[New species of monogenetic trematodes of fish from the Ili river basin.] **1,** 163–166. [In Russian.]
i. GVOZDEV, E. V., 1953.—[Study of the parasite fauna of *Acipenser nudiventris* from the river Ili.] **1,** 167–169. [In Russian.]
j. DOBROKHOTOVA, O. V., 1953.—[The parasite fauna of carp from Lake Zaysan-Nor.] **1,** 170–174. [In Russian.]
k. GVOZDEV, E. V., 1953.—[New trematodes of gallinaceous birds in Kazakhstan.] **1,** 175–181. [In Russian.]
l. FEDYUSHIN, A. V., 1953.—[Some new cestodes from gallinaceous birds of economic importance from northern Kazakhstan and southern Ural.] **1,** 182–189. [In Russian.]
m. RACHININA, N. A., 1953.—[An investigation into the significance of sparrows in the spreading of infection among domestic birds.] **1,** 190–199. [In Russian.]
n. ULYANOV, S. D., 1953.—[Effectiveness of various methods of postimaginal worming of sheep with phenothiazine.] **1,** 200–204. [In Russian.]

(950a) Orlov discusses the specificity of parasites in relation to their localization in the host, the growing and seasonal specificity, and in conclusion gives his definition of the term specificity. G.I.P.

(950b) Boev gives a comparative study of the morphological characters of males, females and larvae of numerous protostrongylid species, with special reference to their sex organs. G.I.P.

(950c) In the Alma-Ata region, treatment of 202 dogs revealed cestode infections in 42%. This included two larval forms pathogenic to man and farm animals, *Multiceps multiceps* 3·3% to 4·1% and *Echinococcus granulosus* 6·6% to 10·4%. These two species were not found in 37 foxes, of which 89·2% were infected with other species. It is concluded that dogs are the main source of these two infections in this region, as opposed to some other regions of Russia where wolves are considered to be the source. G.I.P.

(950d) Of the 14 helminth species found in 72 chickens from various parts of south-eastern Kazakhstan, five are new for this region, namely, *Echinoparyphium recurvatum*, *Notocotylus attenuatus*, *Plagiorchis arcuatus*, *Capillaria columbae* and *Tetrameres timofeevoi*. A list of the 21 species recorded from chickens in Kazakhstan is given. G.I.P.

(950e) Boev describes and lists the hosts and distribution of *Neostrongylus linearis* and *N. zvetkovi* and gives a diagnosis of Neostrongylinae and its two genera *Neostrongylus* and *Orthostrongylus*. G.I.P.

(950f) One acanthocephalan, two trematode, 16 cestode and 20 nematode species were found in rodents from the Alma-Ata and Taldy-Kurgan regions. Sixteen species of rodents were examined. A number of species new for Kazakhstan were recorded and the following new host records were made: *Apodemus sylvaticus* for *Hymenolepis diminuta*, *Meriones tamaricinus* for *H. ognewi*, and *Citellus fulvus* for *Cysticercus tenuicollis*. A list of the helminth species found in rodents in Kazakhstan is given under hosts. G.I.P.

(950g) Three animal species were examined for helminths for the first time. The 25 *Felis ocreata* examined from the Ili river valley were all infected. The most frequent of the nine species found were *Hydatigera taeniaeformis* (88%) and *Toxocara mystax* (52%). In 32 *Mustela altaica* from the Ili valley two species, *Crenosoma taiga* and *Centrorhynchus ninni*, were found; 50 *M. erminea* from the Tardy-Kurgan region harboured only *C. ninni*. G.I.P.

(950h) Two new Gyrodactylidae are described from the Ili river basin. *Paragyrodactylus iliensis* n.g., n.sp. was found on the gills of *Nemachilus strauchi*. The new genus has two head lobes. There are on the opisthaptor 16 lateral hooks, one pair of large median hooks with two connecting plates and a complement of chitinous armature. *Gyrodactylus kessleri* n.sp. from the gills of *N. strauchi*, *N. labiatus* and *N. stoliczkai* is characterized by the shape of the median hooks and the structure of the connecting plate which has rounded edges and a membrane with thickened ridge-like edges. G.I.P.

(950i) Gvozdev records four species, namely, *Diplostomulum spathaceum*, *Rhabdochona denudata filamentosa*, *Contracaecum squalii* and the leech *Piscicola geometra* for *Acipenser nudiventris* from the Ili river, and generally discusses the parasite fauna of these fish in the Ili river. G.I.P.

(950j) Ten helminths and one leech, *Piscicola geometra*, were found among other parasites of 53 carp from Lake Zaysan-Nor. The change in the parasite fauna of the carp, which were originally transferred from Lake Balkhash, is briefly discussed. G.I.P.

(950k) Four new trematodes are described and figured from birds in the Alma-Ata region. *Brachylecithum tetraogalli* n.sp. and *Corrigia ulari* n.sp. were found in *Tetraogallus himalayensis*. *C. ulari* differs from all other species in this genus in the characteristic structure of the uterus, which consists of numerous transverse loops in two longitudinal rows irregularly inter-connected with one another and filling all the posterior half of the body. *Brachylaemus tjanschanica* n.sp. from *Perdix daurica* is nearest to *B. arcuatus*, but differs from it in the flattened 6–7 mm. long body, the larger suckers (the oral sucker is 0·38 mm., the ventral 0·32–0·35 mm. in diameter) and the size of the bursa (0·6–0·7 mm. × 0·16 mm.). *Philophthalmus coturnicola* n.sp. from the small intestine of *Coturnix coturnix* is characterized by the localization and the host and the position of the genital pore (between the ventral sucker and the intestinal bifurcation) and the uterus (in the centre of the body between the ventral sucker and the ovary). *P. skrjabini*, the only other species found in the small intestine, belongs to the subgenus *Philophthalmus*, while the new species, having tube-like vitellaria in the lateral sides of the body outside the gut caeca, should be placed in *Tubolecithalmus* Skryabin, 1947. G.I.P.

(950l) *Raillietina* (*Skrjabinia*) *circumvallata* var. *sibirica* n.var. from *Lyrurus tetrix viridanus* and *Perdix perdix* was first found by the author in 1940 in Kazakhstan. It differs from other species and subspecies of the subgenus in having an unarmed cirrus and in the larger measurements of the body and organs which are given in a comparative table. *Rhabdometra* (?) *setosa* n.sp. from *L. tetrix*, and *R. tomica kirikowi* n.subsp. from *Tetrao urogallus* are reported from the Omsk region. *R. tomica kirikowi* differs from the type in the measurements and the host. *R. setosa* differs from other representatives of this genus from gallinaceous birds in the form of its cirrus and the absence of a neck. This latter character and the number of testes (40–67) bring it near to *R. nullicollis*, but the new species differs in having an armed cirrus and a smaller head. G.I.P

(950m) An investigation of the parasites of 215 sparrows was undertaken in the Kazakhstan region. Among the seven helminth species were two specimens of *Diplotriaena* sp. not previously found in sparrows, of which a short description is given. The various parasites found are listed under their hosts and are discussed in relation to their occurrence in domestic animals, particularly birds. G.I.P.

(950n) Five methods of treatment with small daily doses of phenothiazine interrupted by various time periods were compared on one-year-old sheep with intestinal strongyles. The best results (100% efficacy) were obtained by using continuous daily dosing, and the effect decreased to 71·2% when the daily treatments for seven days were interrupted by periods of seven days. G.I.P.

**951—Trudi Vsesoyuznogo Instituta Gelmintologii Imeni Akademika K. I. Skryabina.**

a. GARKAVI, B. L., 1953.—[The life-cycle of the nematode *Streptocara crassicauda*. Diagnosis and epizootiology of streptocariasis of ducks.] **5,** 5–22. [In Russian.]
b. DEMIDOV, N. V., 1953.—[Contributions to the study of the biology of *Strongylus equinus* and the diseases caused by it.] **5,** 23–39. [In Russian.]
c. MALIGIN, S. A., 1953.—[The biology of *Strongyloides ransomi*; a disease of pigs.] **5,** 40–46. [In Russian.]
d. NOSIK, A. F., 1953.—[Morphological modifications of larval (cyst) forms of *Echinococcus granulosus* and its genesis.] **5,** 47–48. [In Russian.]
e. PETROCHENKO, V. I., 1953.—[The post-embryonic development of the acanthocephalan *Polymorphus magnus*—a disease of ducks.] **5,** 49–62. [In Russian.]
f. SAVINOV, V. A., 1953.—[The development of *Alaria alata* (Goeze, 1782) in dogs.] **5,** 63–64. [In Russian.]
g. TIUNOV, V. I., 1953.—[The life-cycle of the nematode *Trichonema longibursatum* in the horse.] **5,** 65–67. [In Russian.]
h. KANIGINA, K. I., 1953.—[On the metabolism of helminths.] **5,** 68–72. [In Russian.]
i. BOROVKOVA, A. M. & POTEKHINA, L. F., 1953.—[*Travassosius rufus* Khalil found in beavers in Russia.] **5,** 73–74. [In Russian.]
j. OZERSKAYA, V. N., 1953.—[On the fauna of parasitic worms of the wild boar.] **5,** 75–81. [In Russian.]
k. PETROV, A. M. & POTEKHINA, L. F., 1953.—[The helminth fauna of predacious mammals in Tadzhikistan.] **5,** 82–94. [In Russian.]
l. PETROV, A. M. & POTEKHINA, L. F., 1953.—[A new species of trichurid—*Trichocephalus spalacis* n.sp. from *Spalax*.] **5,** 95–98. [In Russian.]
m. SAVINOV, V. A., 1953.—[Change in the helminth fauna of the raccoon-like dog as result of its acclimatization in the Kalininsk region.] **5,** 99–102. [In Russian.]
n. FEDYUSHIN, A. V., 1953.—[Helminths of chickens in Western Siberia.] **5,** 103–104. [In Russian.]
o. DUBOVOI, D. N., 1953.—[The influence of strongyloidiasis on the growth and development of piglets.] **5,** 105–108. [In Russian.]
p. ERSHOV, V. S., 1953.—[The clinical symptoms and diagnostics of *Alfortia* infection in horses.] **5,** 109–123. [In Russian.]
q. PANASYUK, D. I. & TSVETAEVA, N. P., 1953.—[The action of carbon tetrachloride on sheep.] **5,** 124–145. [In Russian.]
r. TSVETAEVA, N. P., 1953.—[Histopathological changes in the stomach of ducks by streptocariasis.] **5,** 146–149. [In Russian.]
s. TSVETAEVA, N. P., 1953.—[Pathology of *Echinuria* infections of aquatic birds.] **5,** 150–157. [In Russian.]
t. BONDAREVA, V. I., 1953.—[Phenothiazine treatment of horses.] **5,** 158–159. [In Russian.]
u. GAGARIN, V. G., 1953.—[On the study of the life-cycle of *Capillaria caudinflata* and the therapy of capillariasis of chickens.] **5,** 160–162. [In Russian.]
v. MALYSHEV, K. G., 1953.—[Experimental application of chenopodium oil for *Uncinaria* and *Toxocara* infections of adult silver-black foxes.] **5,** 163–164. [In Russian.]
w. OZERSKAYA, V. N., 1953.—[Experimental application of phenothiazine in nematodiasis of the digestive tract of camels.] **5,** 165–166. [In Russian.]
x. PETROV, A. M. & PANISHEVA, L. V., 1953.—[Testing of phenothiazine in *Capillaria* infections of the stomach and urinary bladder of mink and sable.] **5,** 167–172. [In Russian.]
y. VELICHKIN, I. A., 1953.—[An experiment to eradicate *Delafondia*, *Alfortia* and *Strongylus* infections among horses kept in droves.] **5,** 173–174. [In Russian.]
z. KRASTIN, N. I., 1953.—[Thelaziasis of cattle and its control.] **5,** 175–181. [In Russian.]

ba. OZERSKAYA, V. N., 1953.—[The role played by terrestial molluscs in spreading *Muellerius* infection and measures for its control.] **5,** 182–189. [In Russian.]
bb. SHUMAKOVICH, E. E., RUDAKOV, V. S. & BURLAKOVA, K. I., 1953.—[Experimental control of muelleriasis and protostrongyliasis by prophylactic treatment with emetine hydrochloride.] **5,** 190–194. [In Russian.]
bc. PARAMONOV, A. A. & KHARICHKOVA, M. V., 1953.—[Phytohelminthiases of potato tubers and onion in the Moscow region.] **5,** 195–213. [In Russian.]
bd. SKARBILOVICH, T. S., 1953.—[Removal of *Heterodera schachtii* from the soil by treatment in the early larval stage of the infection by the method of "up-rooting crops".] **5,** 214–217. [In Russian.]

(951j) Ozerskaya enumerates the helminths found in three wild boar, one each from azakhstan, Armenia and Far East in Russia. From the last region, *Metastrongylus pulmonalis* sp. is described, but not figured, from one male found in the lungs. The nearest species *. pudendotectus* has alae along the whole length of the spicules which are anchor-shaped stally, while in *M. pulmonalis* the alae start 0·217 mm. from the proximal end and the distal d gradually narrows, splitting into two thin branches bent backwards. The spicule and irsa structure also differentiate *M. pulmonalis* from *M. elongatus* and *M. salmi*. *Globo-phalus samoensis* and *Bourgelatia diducta* are described and figured. G.I.P.

(951k) In a parasite survey of seven predacious mammal species in Tadzhikistan, helminth species were found. A new Spirocercinae, *Vigisospirura skrjabini* n.g., n.sp., is ured and described from *Meles meles*. The new genus has no chitinous oral armature thus ffering from *Cylicospirura* and *Cyathospirura*. It possesses two three-lobed lateral lips d two interstitial ones, its spicules are equal in shape and size and worms are found free the oesophagus; while in *Spirocerca* there are six oral lips, the spicules are unequal and the rms are found in tumours in the oesophagus and stomach. The adults of *Hydatigera pkogorski*, known from the larval form only, are described from *Felis ornata caudata*. *Taenia esei*, *T. macrocystis* and *Joyeuxiella echinorhynchoides* are registered for the first time for ssia. The parasites are listed under their hosts, seven of which are new records, viz., *aus chaus* for *Dirofilaria immitis* and *D. repens*, *Meles meles* for larval *Macracanthorhynchus ulinus*, *Canis aureus* for *Taenia ovis*, *Tigris t. virgata* for *Taenia bubesci*, *Vulpes vulpes* for *enia macrocystis*, and *Felis ornata caudata* for *Hydatigera krepkogorski*. G.I.P.

(951l) *Trichocephalus spalacis* n.sp., figured and described from the intestine of *Spalax trophthalmus* from the Ukraine SSR., has smaller eggs (0·062–0·065 mm.) than *T. megaloon* 08 mm.). From the remaining ten *Trichocephalus* species described from rodents, *T. spalacis* fers in the length of its spicule (1·522–1·727 mm.) and in the host. G.I.P.

(951w) Phenothiazine in the dose of 20–60 gm. was experimentally given in the morning 19 camels with Strongylate infections. Seven discontinued passing eggs. In the remainder average number of eggs passed by each animal fell from 14·3 to 4·5. The treatment was ll tolerated and even a single dose of 200 gm. given to an old, worn out camel did not cause normal symptoms. G.I.P.

(951x) Phenothiazine, mixed with food, was given after a 16–18 hours' hunger diet to nk at doses of 0·25 gm., 0·5 gm. and 1 gm. and to sable at doses of 0·5 gm. and 1 gm. per mal. Against *Capillaria putorii*, found in the stomach, the extensefficacy was 66·9% mink and 33·3% in sable while the intensefficacy was 93·2% and 59·1% respectively. ainst *C. mucronata* in the urinary bladder the extensefficacy was 73·9% in mink and 40% sable, while the intensefficacy was 82·9% and 56·3% respectively. Only one mink, which l received 0·25 gm., died; generally animals autopsied 7 days after the treatment suffered m splenomegaly and hyperaemia, but after 14 to 27 days they had returned to normal. G.I.P.

**952—Trudi Zoologicheskogo Instituta. Akademii Nauk SSSR.**

a. BIKHOVSKI, B. E. & POLYANSKI, Y. I., 1953.—[Contribution to the knowledge of th marine monogenetic trematodes of the family Gyrodactylidae Cobb.] **13,** 91–126. [In Russian.]
b. GUSEV, A. V., 1953.—[Monogenetic trematodes of Amur fish.] **13,** 127–136. [In Russian.]
c. NAGIBINA, L. F., 1953.—[*Heterobothrium affinis* (Linton) and its systematic position amon the monogenetic trematodes of the family Diclidophoridae Fuhrmann.] **13,** 137–144. [I Russian.]
d. STRELKOV, Y., 1953.—[The systematic position of *Axine belones* in the system of monoc genetic trematodes.] **13,** 145–154. [In Russian.]
e. IZYUMOVA, N. A., 1953.—[ Experimental study on the specificity of monogenetic trematodes **13,** 155–159. [In Russian.]
f. BELOPOLSKAYA, M. M. & BIKHOVSKAYA-PAVLOVSKAYA, I. E., 1953.—[*Pro acetabulorchis dogieli* n.sp (family Dicrocoeliidae), a new parasite of bird liver.] **13,** 160–162 [In Russian.]
g. BIKHOVSKAYA-PAVLOVSKAYA, I. E. & ZHUKOV, E. V., 1953.—[The systematics c the genera *Apharyngostrigea* Ciurea, 1927 and *Parastrigea* Szidat, 1928 (Trematoda, Strigeidae). **13,** 163–170. [In Russian.]
h. DUBININA, M. N., 1953.—[Dynamics of the parasite fauna in snakes of the Volga Delt adjacent to the sea.] **13,** 171–189. [In Russian.]

(952a) Bikhovski & Polyanski describe from marine fishes eight species and two subs species of *Gyrodactylus*, of which all but four are new, and four species of *Gyrodactyloides*, o which three are new. *Gyrodactylus marinus* n.sp. from the gills of *Gadus morrhua morrhua G. morrhua macrocephalus* and *Theragra chalcogramma chalcogramma*; *Gyrodactylus marinu aeglefini* n.subsp. from the gills of *Melanogrammus aeglefinus*; *G. pterygialis* n.sp. from th fins of *Pollachius virens*; *G. perlucidus* n.sp. from the gills of *Zoarces viviparus*; *G. grönlandicu pacificus* n.subsp. from the fins and gills of *Myoxocephalus* sp., *Blepsias cirrhosus* and *Opistho centrus zonope*: and *G. proximus* n.sp. mainly from the pectoral fins of *Pallasina barbata* and also *Gyrodactyloides andriaschewi* n.sp. and *G. gussevi* n.sp. from the gills of *Mallotu villosus* and *G. strelkowi* n.sp. from the gills of *Oncorhynchus gorbuscha*. R.T.L.

(952b) Eight species of Gyrodactylidae are described from the gills of Amur fishes Six are new, viz., *Dactylogyrus cristatus* n.sp. from *Gobio gobio cynocephalus*, *D. pseudaspi* n.sp. from *Pseudaspius leptocephalus*, *D. juveniformis* n.sp. from *Xenocypris macrolepis D. dogieli* n.sp. form *Carassius auratus gibelio*, *Gyrodactylus lenoki* n.sp. from *Brachymystax lenok* and *G. lotae* n.sp. from *Lota lota*. *Dactylogyrus anchoratus geei* Yin & Sproston, 194 is raised to specific rank as *D. geei* (Yin & Sproston) n. comb. *D. cryptomeres* Bychowsky 1934 is recorded from *Godio soldatovi*. R.T.L

(952c) *Heterobothrium affinis* is recorded from the gills of *Atheresthes evermanni* and *A. stomias* for the first time on these fish and in the Soviet Union. Nagibina agrees with Sproston in regarding *Neoheterobothrium*, of which *N. affinis* was type species, as a synonym of *Heterobothrium* and gives a new diagnosis for the latter. R.T.L. G.I.P

(952d) Strelkov reviews the characters upon which Price based the new subfamily Axininae to which he referred *Axine belones* and concludes that they do not provide a sufficient basis for a separate subfamily in the Microcotylidae. R.T.L. G.I.P

(952e) Monogenetic trematodes are known to be good examples of strict host specificity yet *Dactylogyrus vastator* is frequently found on both *Cyprinus carpio* and *Carassius carassius* without showing any morphological differences. As *Dactylogyrus solidus* is parasitic on *Cyprinus carpio* but not on *Carassius carassius* when within reach it appears possible that this is associated with a difference in the mechanism of infection. Parts of or complete gill arches carrying *D. solidus* were transferred from infected carp to *Carassius*. As the carp gills died some *D. solidus* moved to those of the *Carassius* where they took up their normal position and

used the gills to swell and turn grey. They remained alive and laid eggs during the experients which lasted from 10 to 12 days. The transference of gills, carrying *D. vastator*, from rp to *Carassius* gave similar results. Larvae of *D. vastator* were artificially hatched and eveloped in the young of both species. 60% to 70% of the carp but only 25% of the *Carassius* ecame infected. This result indicates that some physiological differences between these two shes limited the ability of the parasite to fasten on to the less usual host. R.T.L. G.I.P.

(952f) *Proacetabulorchis dogieli* n.sp. from *Numenius cyanopus* in Primore, the Soviet ar East, and *N. arquata lineatus* in West Siberia differs from *P. prashadi* mainly in that the ackers are of equal size and the testes lie horizontally. Moreover *P. dogieli* inhabits the ile-ducts whereas *P. prashadi* lives in the intestine. R.T.L. G.I.P.

(952g) Two new strigeids are described from birds in West Siberia, viz., *Parastrigea natis* n.sp. from the wild duck differs from *P. cincta* in lacking branched outgrowths of the nterior part of the body. *Apharyngostrigea parastrigiformes* n.sp., unlike *A. flexilis*, has a raight body. The genital glands lie in the second third of the posterior portion of the body. he yolk glands are in half-pear-shaped aggregations. Lateral outgrowths of the anterior egion are not well developed. *Parastrigea intermedia* Tubangui, 1932 is transferred to *pharyngostrigea* as *A. intermedia* n.comb. R.T.L. G.I.P.

(952h) Recent changes in the hydrology of the lower region of the Volga due to delta ormation have resulted in the transference of animals in a southern direction and the cclimatization of new animals in the Delta region. The effect of these and other changes on ne parasite fauna of snakes, fish-eating birds and other predators and on the spread of parasites n domestic and trade animals is discussed. R.T.L. G.I.P.

## 53—Tuinbouw-Berichten.

*a. GILLARD, A., 1953.—[Root-knot nematodes: important enemies of horticulture.] **17**, 180.

## 54—Vakblad voor Biologen.

a. LAAN, P. A. VAN DER, 1953.—"Aaltjes als parasieten van planten." **33** (10), 181–196.

(954a) In this general account of nematodes as parasites of plants van der Laan deals riefly with the taxonomy and biology of the group and refers to experimental methods used n nematological investigations. He gives a short review of some of the literature on nematode iseases and on various methods of control. M.T.F.

## 55—Věstník Československé Zoologické Společnosti.

a. VOJTECHOVSKÁ-MAYEROVÁ, M., 1953.—"Nové nálezy parasitických červu u našich ptáku." **17** (1), 71–88. [German & Russian summaries pp. 85–87.]

(955a) Of 735 wild birds belonging to 14 orders examined in Czechoslovakia, 218 were nfected with helminths. 27 cestode species were found in 148 birds, 13 nematode species in 3 birds, three trematode species in 15 birds and two acanthocephalan species in nine birds. *iorchis bulbodes* from *Anas platyrhynchos*, and *D. ransomi* from *Fulica atra* are reported for e first time from Europe and *Hymenolepis farciminosa* from *Garrulus glandarius*, *H. venusta* om *A. platyrhynchos* and *Choanotaenia strigium* from *Strix aluco* for central Europe. G.I.P.

**956—Vestnik Khirurgii Imeni Grekova.**

*a. ETS, A. G., 1953.—[Perforation of the gall-bladder by ascaris.] **73** (4), 52. [In Russian.]

**957—Veterinär-Medizinische Nachrichten. Marburg.**

a. WETZEL, R., 1953.—"Zur Verbreitung von *Fasciola hepatica*, *Dictyocaulus viviparus*, *Hypoderma bovis* und *H. lineatum* im Lande Nordrhein-Westfalen." Year 1953, No. 3/4, pp. 133–168. [English, French & Spanish summaries pp. 153–157.]

(957a) Wetzel presents a series of maps showing the distribution of *Fasciola hepatica* and *Dictyocaulus viviparus* in North Rhine-Westphalia, based on 5,000 faecal examinations over a three-year period and on reports from 994 veterinary surgeons. The incidence in each district is also given in tabular form. On the right of the Rhine *F. hepatica* is wide-spread in the clay and loamy region of the north-west and along the middle Lippe valley up to Minden; south of this line (in fertile loess plains and hilly areas) it only appears sporadically. On the left of the Rhine liver-fluke is only evident in some mountain areas of Schleiden. Because of the high moisture requirements of its larvae *D. viviparus* is also largely limited to the clay and loam areas on the right of the Rhine: it appears elsewhere only occasionally in limited districts. A.E.F.

**958—Veterinaria. Rio de Janeiro.**

*a. DACORSO, P., LANGENEGGER, J. & DOBEREINER, J., 1953.—[The occurrence of infestation of *Dirofilaria immitis* (Leidy, 1856) in the post-mortem examination of dogs at the National Veterinary School.] **7** (3), 22–27. [In Portuguese: English summary.]

**959—Veterinársky Časopis. Bratislava.**

*a. SICHOBALOVOVÁ, N. P., 1953.—"Otázky imunity pri helmintózach cestodózy. Onemocnenia vyvolávané larválnymi stádiami cestódov." **2**, 103–132.

b. VODRÁŽKA, J., 1953.—"Ovplyvnenie permeability kutikuly *Ascaris suum* Goeze, 1782 in vitro." **2** (4), 217–230. [German & Russian summaries pp. 229–230.]

(959b) Experiments on *Ascaris suum* in vitro showed that the selective permeability of the cuticle could be influenced and that the best substances to lower the surface tension and favour the entrance of anthelmintics were sodium acetate theophylline, then digitonin and primula saponin. Urea was least active. The best synergic activity was obtained with 50, 100 and 200 mg. per cent concentrations. G.I.P.

**960—Veterinářství. Brno.**

a. MÜLLER, K., 1953.—"Prevence a léčení parasitárních chorob v pastevním odchovu skotu a ovcí se zřetelem k jejich přenašečum." **3** (5), 101–102.

b. KUKRÁL, F., 1953.—"Problém motolice u přežvýkavcu." **3** (5), 102.

c. LAX, T., 1953.—"Léčení parasitárních chorob ovcí." **3** (6), 149–151.

d. RYŠAVÝ, B., 1953.—"Parasiti ovcí a jejich reservoáry v přírodě." **3** (7), 170–173.

e. HOVORKA, J., 1953.—"K terennym a laboratórnym metódam diagnostiky parazitov a ich sjednoteniu." **3** (11), 249–251.

f. SCHANZEL, H., 1953.—"Diagnostika dictyocaulosy ovcí." **3** (12), 271–273.

g. PRODANOV, P. & DELČEV, G. & ANTONOV, S., 1953.—"O antiaskardním účinku étherického oleje, získaného z *Chenopodium botrys* (L.)." **3** (12), 283–284.

(960a) In Müller's opinion flukes and lungworms are the most important helminths of cattle and sheep. He recommends the adoption of the control methods of Soviet helminthologists. He recommends injections of Lugol's solution against Dictyocaulus and emetine against Muellerius. Flukes are best controlled by the destruction of their intermediate hosts and for this purpose 1,200–1,400 litres of a 1% solution of copper sulphate per hectare or copper

sulphate mixed with sand at 15–30 kg. per hectare should be distributed on meadows. Copper sulphate also controls the intermediate host of Muellerius. C.R.

(960b) Kukrál draws attention to the wide distribution of flukes in ruminants in Czechoslovakia. He recommends the treatment of animals, the control of snails by treating pastures with 300 kg. of kainite per hectare or with a 5% solution of copper sulphate and the provision of a supply of clean water for drinking. C.R.

(960c) Lax reports good results obtained in sheep with parasitic gastro-enteritis when treated with phenothiazine. He also used 2% copper sulphate with 2% of nicotine sulphate 40% at dose rates of 80 c.c. for adult sheep, 60 c.c. for sheep 12 to 18 months old, 30–40 c.c. for yearlings and 15–20 c.c. for those up to six months. Against Moniezia he recommends 1% or 2% solutions of copper sulphate in doses of 15–20 c.c. for lambs 1–1½ months old and 80–100 c.c. for adults, with fasting 12 to 15 hours before treatment. Against *Dictyocaulus filaria* he used intratracheal injections of Lugol's solution and against *Muellerius capillaris* he used emetine hydrochloride at 0·003 gm. per kg. body-weight in a 2% solution given parenterally. Sheep affected with Fasciola were treated with hexachlorethane or carbon tetrachloride. C.R.

(960d) Ryšavý in this paper discusses the natural reservoirs of helminths of sheep. He thinks that roe-deer grazing with sheep in mountainous regions is not dangerous for the sheep. But when sheep and roe-deer were grazing together in small areas the infestation of both the sheep and roe-deer was very heavy and it was found that the parasites were acquired by roe-deer from sheep. Roe-deer in turn may be dangerous to sheep. He considers wild sheep to be the most important reservoir of parasites of sheep but foxes, badgers and stray dogs may also play an important role as reservoirs of cysticerciasis, hydatid and coenuriasis. *Dictyocaulus filaria*, *Protostrongylus kochi* and *Muellerius capillaris*, *Fasciola hepatica* and *Dicrocoelium dendriticum*, and *Moniezia expansa* and *M. benedeni* may all be acquired by sheep from wild game. C.R.

(960e) Hovorka, in diagnosing nematode infection, recommends the examination of faeces by Darling's method (a mixture of glycerin with saturated sodium chloride solution) or any other fluid which gives a specific gravity of 1240. The trematode infections require a higher specific gravity and for this purpose he recommends magnesium sulphate which will give a specific gravity of 1410. The recovery of larvae from faeces should be either by the Vajda or by the Baermann method. C.R.

(960f) Schanzel describes briefly the clinical symptoms, pathological changes and faecal methods for the diagnosis of *Dictyocaulus filaria* in sheep. He also used Szaflarski's intradermal allergic test and found it specific and quicker than faecal examination. C.R.

(960g) The authors found that locally grown *Chenopodium botrys* contained 0·23% of an ethereal oil which possessed both anti-ascarid and anti-strongyle action. When given to pigs infected with *Ascaris lumbricoides* (after a 12-hour fast) a mixture of 2% chenopodium oil and 98% castor oil in the dose of 0·5 ml. per kg. body-weight gave excellent results. When oil of *Chenopodium botrys* was administered to horses and foals (infected with both Parascaris and strongyles) in doses of 10–15 gm. per kg. body-weight together with 100–150 gm. of castor oil and 10 gm. of sulphonated castor oil the treatment was successful with no toxic effects. C.R.

## 961—Voprosi Neurokhirurgii.

a. VOZNAYA, A. T., 1953.—[Significance of complement fixation in the diagnosis of cerebral cysticerciasis.] **17** (1), 51–53. [In Russian.]

(961a) Cysticercus antigen was used in the complement fixation reaction with cerebrospinal fluid and blood serum from 181 persons with various diseases of the central nervous system, including 34 with cerebral cysticerciasis. In 31 of these the reaction was positive

but with the cerebrospinal fluid only in two. Of the other 147 cases, the reaction was negative in 134 and positive in six without apparent cause. It was also positive in seven with clinical symptoms of cysticerciasis but on operation cysts were not found; as arachnoiditis was observed in all of them the possibility of cysts in other parts of the brain could not be excluded. This assumption was proved in two cases at post-mortem. Adding these results to those obtained in 1939 by similar tests, the author concludes that the reaction was positive in 94% of the 67 cases of cysticerciasis and in 6% of the 208 cases suffering from other nervous diseases, and that both the cerebrospinal fluid and the serum must be tested. G.I.P.

**962—Yearbook of Agriculture. U.S. Department of Agriculture.**

a. TAYLOR, A. L., 1953.—" The tiny but destructive nematodes." Year 1953, pp. 78–82.
b. CHRISTIE, J. R., 1953.—" Using chemicals to combat root diseases." Year 1953, pp. 120–125.
c. CARTER, W., 1953.—" Fumigation of soil in Hawaii." Year 1953, pp. 126–128.
d. TAYLOR, A. L., 1953.—" More about the control of nematodes." Year 1953, pp. 129–134.
e. SMITH, A. L., 1953.—" Fusarium and nematodes on cotton." Year 1953, pp. 292–298.
f. LAMBERT, E. B. & AYERS, T. T., 1953.—" Diseases of the common mushroom." Year 1953, pp. 478–482.
g. GAINES, J. G. & TODD, F. A., 1953.—"Crop rotations and tobacco." Year 1953, pp. 553–561.
h. GAINES, J. G. & GRAHAM, T. W., 1953.—" Soil fumigation to control root ills." Year 1953, pp. 561–567.
i. DIMOCK, A. W., 1953.—" Control of three ills of chrysanthemum." Year 1953, pp. 592–595.
j. COURTNEY, W. D., 1953.—" Nematodes in bulbs." Year 1953, pp. 621–624.

(962a) Taylor gives a general account of the life-history and biology of nematodes parasitic on plants. He describes the type of damage they cause referring particularly to *Meloidogyne*, *Pratylenchus*, *Trichodorus*, *Belonolaimus*, *Ditylenchus* and *Anguina*. Probably all plants are attacked by one or other of the parasitic nematodes and crop losses due to them in the U.S.A. are considerable. M.T.F.

(962b) Soil fumigants used to combat root diseases should ideally control not only bacteria, fungi, nematodes and insects but also weed seeds. The four groups of fumigants in use have as active ingredient methyl bromide, chloropicrin, dichloropropene or ethylene dibromide. Christie discusses the principles of their application in seed-beds and in the field and describes the conditions essential for their successful use. M.T.F.

(962c) Carter describes the discovery and development of D-D mixture as a soil fumigant in Hawaii where its use is now standard practice on pineapple land. It is used as both nematicide and soil amendment. He compares it with ethylene dibromide which is used for post-planting fumigation of pineapple fields, and discusses briefly the ways in which fumigation affects crop growth. M.T.F.

(962d) Taylor reviews the rates and methods of application of the principal soil fumigants used in the control of nematodes, namely, chloropicrin, methyl bromide, ethylene dibromide, dichloropropene and chlorobromopropene. He also mentions, as methods of nematode control, the use of heat, drying, flooding and bare fallow, and indicates the means by which soil may become infested with parasitic nematodes. In peach orchards the degree of attack of the trees by root-knot nematodes may be considerably affected by the cover crop grown but the simplest means of preventing damage is by the choice of nematode resistant stock. M.T.F.

(962e) In discussing Fusarium wilt of cotton, Smith describes the part played by nematodes in making points of entry for the fungus in the roots. Nematicides can control Fusarium wilt and rotations with crops which reduce the root-knot nematodes in the soil are also valuable. In a search for a type of cotton resistant to root-knot several sources have been found, the most promising being *Gossypium barbadense* var. *darwinii* and two wild Mexican cottons. Work is going on to breed a resistant productive cotton variety. M.T.F.

(962f) Nematodes are mentioned briefly as being responsible for mushroom losses, either parasitic on the hyphae, as producers of toxins or possibly as disease carriers. Pasturization at 140°F. for several hours controls nematodes in compost. J.B.G.

(962g) Root-knot diseases cause serious losses in tobacco; these are worst in Florida and least in Virginia. Crop rotation is designed to control nematode diseases, to keep the soil in good tilth and to aid in the control of non-nematode diseases. Oats, native weeds and harvested Spanish peanuts are the most effective plants in helping to control root-knot. J.B.G.

(962h) This general article reviews briefly the effects of ethylene dibromide and D-D mixture in the attempted control of root-knot. Figures showing the increase in yield are quoted, directions for soil injection are given and the effects of fumigants on the quality of leaf are mentioned. J.B.G.

(962i) Dimock reviews recent progress in the control of septoria leaf spot, verticillium wilt and leaf nematode diseases of chrysanthemums. Terminal cuttings taken from nematode infested plants protected from splashing proved to be free from nematodes. It was found that if old infested plants were removed or ploughed under deeply in autumn, clean plants could be grown on the same soil in the following year. Plants grown in soil treated with sodium selenate or plants sprayed four times with parathion also remained free from infestation. M.T.F.

(962j) Bulb crops have occasionally been damaged by *Meloidogyne* spp., *Hoplolaimus coronatus* and *Pratylenchus* spp. in the warmer parts of the U.S.A. Bulbs of narcissi, iris and Easter lilies are attacked by *Ditylenchus* sp. and *Aphelenchoides olesistus* [*A. fragariae*] in the cooler areas. A general account of the attack by *Ditylenchus* sp. is given together with its control by the hot-water treatment of bulbs. Treatment is at 110°F. in 0·5% formaldehyde, narcissi being treated for four hours and bulbous iris for three hours. *A. olesistus* on Croft Easter lilies is controlled by hot-water treatment for one hour. The need for proper husbandry on bulb growing areas is stressed. J.B.G.

**963—Za Socialistické Zemědělství. Prague.**

a. VOLF, F., 1953.—" Nejduležitější nemoci ryb v našem rybářství a ochrana proti nim." **3** (10), 1156–1162.
b. WILLOMITZER, J., 1953.—" Vzácní cizopasníci drubeže." **3** (11), 1310–1312.

(963a) Among various diseases of fresh-water fish, Volf lists *Dactylogyrus vastator* on the gills of carp, *Sanguinicola* sp. in the blood vessels and *Proalaria spathaceum* in the vitreous humour of the eye. C.R.

(963b) Willomitzer draws attention to *Cyclocoelum mutabile* which is very common in *Fulica atra* and may be found also in domestic poultry. *Harmostomum commutatum*, common in wild pigeons and other wild birds, was found in pigeons in Brno. C.R.

**964—Zashtita Bilja. Belgrade.**

a. KLINDIĆ, O., 1953.—" Korjenova nematoda u Hercegovini." No. 18, pp. 3–17. [English summary p. 17.]
b. TANASIJEVIĆ, N., 1953.—[The golden nematode of the potato.] No. 18, pp. 105–112. [In Serbian.]

(964a) Klindić reports the appearance of *Heterodera marioni* in the region around the town of Capljina in Hercegovina, attacking mainly tomatoes and tobacco. She describes the morphology, biology and oecological factors in the development of this nematode. In her opinion the constant growing of tomatoes and tobacco in this district, practically without rotation, is the chief factor in the wide occurrence of *H. marioni*. *H. marioni* is negligible in fields on which lucerne is grown or in fallow fields. She reviews the physical, chemical and agricultural methods of control. In her own experiments on plots with tomatoes chlor-lime

and HCN (calcium cyanamide) gave unsatisfactory results. Nitrite of lime slightly reduced the infestation. In her opinion crop rotation and the selection of crops which are resistant to *H. marioni* are likely to prove the best methods for controlling this nematode. C.R.

(964b) Tanasijević in this article reviews the recent literature on the distribution, morphology, biology, symptoms, methods of sampling and control of *Heterodera rostochiensis*. C.R.

### 965—Zdravstveni Vestnik.

*a. VALENTINČIČ, M., 1953.—" Okužba človeka s parazitom *Hymenolepis diminuta*." **22** (6), 162–163. [English summary.]

### 966—Zeitschrift für Urologie.

*a. SCHINDLER, E., 1953.—" Echinokokkus der Prostata." **46** (10), 683–698.

### 967—Zoological Magazine. Tokyo.

a. SAWADA, I., 1953.—[On the life history of the poultry cestode, *Raillietina* (*Raillietina*) *echinobothrida*.] **62**, 202–205. [In Japanese: English summary p. 205.]

(967a) Sawada has demonstrated that the ant *Tetramorium caespitum jacoti* can act as an intermediary for *Raillietina* (*R.*) *echinobothrida*. Out of 1,937 ants collected from 14 poultry yards 25 harboured cysticercoids which, when fed to fowls, developed into the adult cestodes. S.W.

### 968—Zoologicheski Zhurnal.

a. PAVLOVSKI, E. N. & GNEZDILOV, V. G., 1953.—[Intra-specific and inter-specific relationship of the components of the parasite biocoenosis in the intestines of the host.] **32** (2), 165–174. [In Russian.]

b. USPENSKAYA, A. V., 1953.—[Life-cycle of the nematodes belonging to the genus *Ascarophis* van Beneden.] **32** (5), 828–832. [In Russian.]

c. KUZNETSOVA, O. N., 1953.—[Distribution of hirudinine in the body of *Hirudo medicinalis*.] **32** (5), 833–839. [In Russian.]

(968a) In a study of intraspecific relationships in the parasite habitat, Pavlovski & Gnezdilov infected 50 dogs with plerocercoids of *Diphyllobothrium latum*, the numbers varying from two to 3,000 plerocercoids per dog. They found that the lengths of the tapeworms varied very much among the population arising from the same infection. In a large population most of the tapeworms were inhibited in development and were at the scolex stage; only a small number reached large dimensions. They think that in a large population the maximum number is preserved because tapeworms of different size possibly require different conditions for existence. This phenomenon of the differentiation of specimens is also recorded for populations of *Toxocara canis* and *Taenia hydatigena*. They conclude that the phenomenon is purposefully and constantly produced by parasites in various conditions of their habitat and that it has become a useful adaptation for the species, assuring life and protection of specimens living in what seems to be a uniform medium. Intraspecific relationships are assumed to be neither antagonistic nor competitive. As for the interspecific relationships of parasites in the same habitat they noted that the number of plerocercoids changing into tapeworms depended on the presence in the intestine of other species of helminths which, in the experimental dogs, were naturally acquired. When *T. hydatigena* was present *D. latum* either had difficulty in establishing itself or its development was retarded. When *Toxocara canis* was present the number of plerocercoids reaching the tapeworm stage was reduced and those which succeeded in establishing themselves were shorter. They consider that in nature interspecific antagonism exists. C.R.

(968b) Uspenskaya records the occurrence of larvae of *Ascarophis morrhuae* in *Pagurus pubescens*, the infection rate varying from 5·5% to 55·5% with a maximum intensity of 11

specimens in any one host. They also occurred in *Spirontocaris spinus* (1·9%) and *Hetairus polaris* (0·3%) and were once found in *Pandalus borealis*. Larvae of *A. filiformis* occur mainly in *H. polaris* (17%) and but rarely in *Eualus gaimardi* (0·9%) and *S. spinus* (0·4%). The numbers examined, numbers infected and the intensity of infections are tabulated. Larvae were found only in Crustacea from the open sea and deep waters, and were not present in those collected in bays. C.R.

(968c) From a series of experiments with various parts of the body of medicinal leeches, Kuznetsova concludes that the hirudin is unevenly distributed in the body. The curve of the suspension of blood coagulation with extracts from various parts of the body increases towards the anterior extremity. The concentration of hirudin in the anterior end is explained by the position of glands occupying regions of the seventh, eighth, ninth and tenth segments. In her opinion only the anterior region of leeches up to the twelfth segment should be utilized for the production of specifics containing hirudin. She also records that the extract from the posterior gut, where digestion and assimilation take place, acts as an accelerator for the coagulation of the blood. C.R.

## NON-PERIODICAL LITERATURE

969—*BABIĆ, I., 1953.—" Udžbenik veterinarske parasitologije (helmintologije i arahno-entomologije). I. Dio uvod u parasitologiju i kazalo (za čitavu knjigu)." Zagreb.

970—*BROWN, V. E., 1953.—" Synopsis of medical parasitology." Milwaukee, Wisconsin: Marquette University Press, 107 pp.

971—†CONFERENCE ON PARASITES AND PARASITIC DISEASES OF DOMESTIC RUMINANTS, State College, New Mexico, September 3–4, 1953. Report.

a. SEGHETTI, L., 1953.—" An experiment on the pathogenicity of *Nematodirus* in young lambs." pp. 4–6.
b. BECKLUND, W. W., 1953.—" Incidental observations on liver fluke in Kittitas County, Washington." pp. 6–7.
c. EVELETH, D. F., 1953.—" A preliminary report on the effect of parasitism on the conversion of carotene into vitamin A by sheep." p. 8.
d. PORTER, D. A., 1953.—" Liver condemnation because of cattle liver fluke in the Gulf Coast area." p. 9.
e. OLSEN, O. W., 1953.—" An evaluation of medicaments, with special reference to teniatol for removing fringed tapeworms (*Thysanosoma actinioides*) from the livers of sheep." pp. 9–10.
f. HONESS, R. F., 1953.—" Review of work on the life history of *Thysanosoma actinioides*, 1948 to 1953." p. 11.
g. HARSHFIELD, G. S., 1953.—" A comparison of the internal parasite infestations in ewes and lambs under different levels of grazing." pp. 12–14.
h. KATES, K. C., 1953.—" Observations on the pathogenic effect on lambs of a cattle strain of *Trichostrongylus axei*." pp. 14–15.
i. KATES, K. C., 1953.—" An experiment on the pathogenic interaction in lambs of *Haemonchus contortus* and *Trichostrongylus axei*." pp. 15–17.
j. ALLEN, R. W., 1953.—" Preliminary observations on the incidence and intensity of nematodes in sheep on irrigated pastures in New Mexico." p. 17.
k. ALLEN, R. W., 1953.—" Pathogenicity of single doses of *Haemonchus contortus* larvae in lambs of New Mexico range origin." p. 18.
l. ALLEN, R. W., 1953.—" The value of phenothiazine-salt therapy and/or pasture rotation in controlling nematode infections in lambs on irrigated pastures." p. 18.
m. SCHWARTZ, B., 1953.—" Remarks on cattle parasite problems." pp. 19–20.
n. PORTER, D. A., 1953.—" Outbreaks of worm parasitism in mature cattle." pp. 20–21.
o. PORTER, D. A., 1953.—" Cross transmission of early stages of ruminant parasites in calves and lambs." p. 21.
p. HONESS, R. F., 1953.—" Observations on morbidity and mortality losses of cattle heavily infected with *Nematodirus* spp." p. 22.

† [Titles only are cited as the conference decided that the report should be distributed only to the participants in the conference and to interested persons directly connected with State Experiment Stations and the U.S. Department of Agriculture and is not for general distribution.]

972—*CONGRESSO INTERNAZIONALE DI MICROBIOLOGIA (6th), Rome, 1953. Riassunti delle comunicazioni.

a. RAPPAPORT, I. & FODOR, A., 1953.—" Immunity to reinfection in experimental trichinosis." Vol. 1, p. 553.

b. PHILIP, C. B., HADLOW, W. J. & HUGHES, L. E., 1953.—" *Neorickettsia helmintheca*, a new rickettsia-like disease transmitted by a helminth." Vol. 2, pp. 256–257.

c. OTTO, G. F. & JACHOWSKI, L. A., 1953.—" Factors in the epidemiology of mosquito borne filariasis." Vol. 2, pp. 596–597.

973—DOLLFUS, R. P., 1953.—" Aperçu général sur l'histoire naturelle des parasites animaux de la morue Atlanto-Arctique *Gadus callarias* L. (=*morhua* L.) et leur distribution géographique." Paris: Paul Lechevalier, 428 pp. [Encyclopédie Biologique No. 43.]

This, the 43rd volume of Encyclopédie Biologique edited by Paul Lechevalier, is an extensive and critical review by Dollfus of the many protozoan, helminth, hirudinian and crustacean parasites of the cod, *Gadus callarias*. There are ten or eleven species of Nematoda of which four or five are larvae, seven species of Acanthocephala of which two are larvae, 18 species of Trematoda of which 16 are Digenea and two are Monogenea, and nine species of Cestoda of which five are Pseudophyllidea, one a larval tetraphyllid and three larval tetrarhynchids. Under each species an account is given of its synonymy, specific characters, life-cycle where known and the geographical distribution of the parasite and of the host. The text contains 253 figures and a large number of foot-notes containing supplementary comments. The bibliography covers 41 pages. R.T.L.

974—FREEMAN, P. & DE MEILLON, B., 1953.—" Simuliidae of the Ethiopian region." London: British Museum (Natural History), vii+224 pp.

In this monograph of the Ethiopian species of Simuliidae, 63 species of *Simulium* and six species of *Cnephia* are recognized; the female, male and pupa of each species where known are described and differentiated. The life-history, habits of the adults and their relation to the spread of onchocerciasis are briefly outlined. R.T.L.

975—*GERASIMOV, B. A., 1953.—[Measures for controlling the stem nematode which is injurious to onion and garlic.] In: [Protection of vegetable crops from diseases and pests], edited by I. A. Vlasov. Moscow: Gosudarstvennoe Izdatelstvo Selskokhozyaistvennoi Literaturi, pp. 136–149. [In Russian.]

976—*GREENE, J. E. & BAILEY, W. S., 1953.—" Metazoan infections." In: "Canine medicine" edited by H. P. Hoskins, J. W. Lacroix & K. Mayer. Evanston, Ill.: American Veterinary Publications, pp. 418–436.

977—GUTELLE, G., 1953.—" Le dioctophyme. Son rôle pathogène." Thesis, Alfort, 66 pp.

In this thesis Gutelle collates the published observations on *Dioctophyme*. The introduction covers general aspects including synonymy, the history of the infection, species parasitized and geographical distribution. The first part is devoted to its biology and life-history and includes sections on morphology, anatomy, and its development in leeches and silurid fish. The second part deals with the pathogenicity, mode of infestation, symptoms, pathology, diagnosis, prognosis and treatment. In conclusion the author reviews the knowledge of the infection in France where the fish intermediaries are still unknown. S.W.

978—*HAMMER, S. G. M., 1953.—" Parasitäre Haustiererkrankungen im Kreise Wetzlar." Dissertation, Giessen, 39 pp.

979—*HENNEN, R., 1953.—" Die Verbreitung parasitärer Krankheiten der Haustiere im Kreise Schlüchtern." Dissertation, Giessen, 26 pp.

980—JAUD, F. X., 1953.—" Die parasitären Krankheiten unserer Haustiere im Landkreis Landau/Isar unter Berücksichtigung der geologischen Verhältnisse." Dissertation, Munich, 41 pp.

Jaud has investigated the incidence of helminth infections of domestic animals in the Landau/Isar district of Lower Bavaria and has attempted to correlate this with local geological conditions. Of 210 horses examined, 203 were positive for strongyles; 41 harboured both strongyles and ascarids. Of 263 cattle, 77 had *Fasciola hepatica*, 62 stomach worms and 51 harboured both infections; three were positive for *Moniezia*. Stomach worms were recovered from all 51 sheep examined; 41 also harboured lungworms, three *Moniezia* and two *F. hepatica*. Jaud finds that animals in areas with a high ground water level, on alluvial and marshy land and near slow-moving streams show a high incidence of infection whilst those on dry loamy and loess soils have a much lower infection rate. He does not consider that geological conditions have a primary influence on the dissemination of parasites; they do, however, affect their development and thus have a secondary effect on incidence. A.E.F.

981—*KAPUSTIN, V. F., 1953.—[Atlas of the most widespread helminths of domestic animals.] Moscow: Gosudarstvennoe Izdatelstvo Selskokhozyaistvennoi Literaturi, 138 pp. [In Russian.]

982—*KIRSCHNINCK, H., 1953.—" Verbreitung des Wurmbefalls bei Edelpelztieren, diagnostiziert durch Kotuntersuchungen, Durchgeführt an hand von Material aus Hessen-Nassau und Kurhessen im Jahre 1952." Dissertation, Giessen, 88 pp.

983—*KONZ, A., 1953.—" Untersuchungen über die Wirksamkeit und Verträglichkeit des Askarisin-Knoll (Askaridol-Schenk Synth.) beim Befall der Silberfüchse mit Askariden und Ancylostomen." Dissertation, Giessen, 34 pp.

984—*KRAMP, E., 1953.—" Verbreitung der parasitären Krankheiten der Haustiere in den Kreisen Trier-Stadt, Trier-Land und Saarburg." Dissertation, Giessen, 45 pp.

985—*KÜSEL, H., 1953.—" Verbreitung parasitärer Tierkrankheiten im Kreise Rotenburg/Hannover." Dissertation, Giessen, 32 pp.

986—*LAQUA, D., 1953.—" Verbreitung parasitärer Tierkrankheiten im Stadt- und Landkreis Fulda." Dissertation, Giessen, 36 pp.

987—*LOHMAR, H., 1953.—" Verbreitung parasitärer Tierkrankheiten im Rheinisch-Bergischen Kreise." Dissertation, Giessen, 47 pp.

988—LORDELLO, L. G. E., 1953.—" Contribuição ao conhecimento dos nematódeos do solo de algumas regiões do Estado de São Paulo." Thesis, Escola Superior de Agricultura "Luiz de Queiroz" da Universidade de São Paulo, 80 pp. [English summary pp. 63–66.]

Lordello adds to our knowledge of the nematodes occurring in the soil in parts of the State of São Paulo by describing *Cylindrocorpus curzii zamithi* n.subsp., which is smaller than the smallest individual of *C. c. curzii* (Goodey, 1935), *Mononchus (Iotonchus) piracicabae* n.sp., which differs from *M. (I.) trichurus* by the absence of a denticle in front of the stomal dorsal tooth, and *Carcharolaimus pizai* n.sp., closely related to *C. dentatus* but differing in the posterior position of the vulva and in the organization of the labial cuticularized structure. The distribution of the 50 genera recorded for São Paulo is listed. The names *Xiphinema insignis* Loos, 1949 and *X. grandis* Steiner, 1914 are emended to *X. insigne* and *X. grande*. Some males of *Meloidogyne* were collected which had vestigial female organs. The geographical range of *Meloidogyne exigua* is extended by its discovery on coffee root galls in Chinchina (Colombia) by Dr. Viégas. An unidentified sporozoan was found in 88% of the specimens of the genera *Xiphinema*, *Dorylaimus* and *Pungentus* examined. Lordello considers the predacious nemas, especially *Mononchus* spp., the most important natural agents of control of the soil nematodes. R.T.L.

989—*MERGL, J., 1953.—" Verbreitung parasitärer Tierkrankheiten in Amberg und Umgebung." Dissertation, Giessen, 35 pp.

990—*MEYER, G. G. F., 1953.—" Verbreitung parasitärer Tierkrankheiten im Siegkreis." Dissertation, Giessen, 35 pp.

991—*MOREL, P., 1953.—" Les cestodes du mouton." Thesis, Alfort, 93 pp.

992—*MOZGOVOI, A. A., 1953.—[Principles of nematodology, edited by K. I. Skryabin. Vol. II. Ascaridata of animals and man and illnesses caused by them. Part I.] Moscow: Izdatelstvo Akademii Nauk SSSR, 351 pp. [In Russian.]

993—*MOZGOVOI, A. A., 1953.—[Principles of nematodology, edited by K. I. Skryabin. Vol. II. Ascaridata of animals and man and diseases caused by them. Part II.] Moscow: Izdatelstvo Akademii Nauk SSSR, 616 pp. [In Russian.]

994—*MÜLLER, B., 1953.—" Die parasitischen Würmer. Ihre Biologie und Bekämpfung. Teil 1. Rundwürmer (Nematoda)." Witenberg/Lutherstadt: A. Ziemsen, 47 pp.

995—*OCHI, Y., 1953.—" Studies on lumbar paralysis of sheep." Tokyo: Bureau of Animal Industry, 6 pp.

Ochi describes experiments carried out in Korea during 1938–43 in which lumbar paralysis was produced in sheep by infecting them with *Setaria digitata* larvae. *S. marshalli* did not cause lumbar paralysis, being found in the peritoneal cavity of sheep and goats but not in the brain or spinal cord. *Anopheles sinensis hyrcanus* and *Armigeres obturbans* are vectors of *S. digitata*. The disease is seasonal in occurrence. [Based on an abstract in *Vet. Bull.*, **25** (11), p. 634.] S.W.

996—PAPERS ON HELMINTHOLOGY PRESENTED TO ACADEMICIAN K. I. SKRYABIN ON HIS 75th BIRTHDAY. Moscow: Izdatelstvo Akademii Nauk SSSR, 812 pp.

a. [SKRYABIN, K. I.], 1953.—[A list of genera and species of helminths, named in honour of Academician K. I. Skryabin.] pp. 11–14. [In Russian.]
b. ABLASOV, N. A., 1953.—[A new trematode from the duck—*Notocotylus skrjabini* n.sp.] pp. 15–16. [In Russian.]
c. ALTAEV, A. K., 1953.—[Two new nematodes of the family Trichostrongylidae from sheep in Daghestan.] pp. 17–24. [In Russian.]

(996b) *Notocotylus skrjabini* n.sp. from *Anas platyrhynchos* in Kirgizia is described and figured. It is the only species of *Notocotylus* with 15 cutaneous glands, five in each of three longitudinal rows. G.I.P.

(996c) Altaev has raised the subgenus *Skrjabinagia* to generic rank on the absence of a gubernaculum and has transferred to it the following species: *Ostertagia* (*Ostertagia*) *tundra*, *O.* (*Marshallagia*) *butschnewi*, *Spiculopteragia houdemeri* and *S. cervi*. *Skrjabinagia dagestanica* Altaev, 1952 from sheep is described and figured from one male and is distinguished from other species by its spicules which are equal in size and shape and have two processes at the distal end. The trunk of the dorsal ray is longer than its branches. *Marshallagia schikhobalovi* n.sp. also from *Ovis aries* in Dagestan is described and figured; it differs from *M. marshalli* and *M. mongolica* by the dorsal ray which is 0·235 mm. long and terminates distally in two small branches (0·011 mm.), and by the 0·243 mm. long spicules which branch into three processes at the distal end. Keys are given for the species of *Skrjabinagia* and *Marshallagia*. G.I.P.

PAPERS ON HELMINTHOLOGY PRESENTED TO ACADEMICIAN K. I. SKRYABIN ON HIS 75th BIRTHDAY. Moscow: Izdatelstvo Akademii Nauk SSSR, 812 pp. (cont.)

d. ALF, S. L., 1953.—[A survey of the contamination of ponds and reservoirs by helminth ova.] pp. 25–33. [In Russian.]
e. ARTYUKHOVSKI, A. K., 1953.—[The infection of *Porthetria dispar* larvae by the nematode *Hexamermis albicans* (Siebold, 1848) Steiner, 1924.] pp. 34–36. [In Russian.]
f. BADANIN, N. V., 1953.—[The discovery of *Gongylonema pulchrum* Molin, 1857 in a camel.] pp. 37–38. [In Russian.]
g. BARCHENKO, I. P., 1953.—[The importance of some food products as possible factors in the geohelminth infection of a population.] pp. 39–43. [In Russian.]
h. BAUER, O. N., 1953.—[The influence of environmental factors on the development of helminths of pond fish.] pp. 44–46. [In Russian.]

(996d) The contamination of water reservoirs with helminth eggs depended on their proximity to centres of infection, on their use by the population for bathing and for the watering of cattle and on the direct entry of sewers. In eight reservoirs in the Rostov region infection with helminths varied from 30 to 275 eggs per cu. m. of water. 5% to 7% of the Ascaris eggs and 2% to 3% of the Trichuris eggs contained larvae. The sediments contained equivalent amounts of eggs, but 15% to 18% of Ascaris and 5% of Trichuris eggs contained larvae. When eleven reservoirs in the Stavropol region were investigated in the spring the contamination was 100 to 250 eggs per cu. m. while in the summer to autumn period it was 250 to 800 eggs per cu. m. Additional tests showed that infective Ascaris eggs may either enter with the sewage or may develop in the reservoir. Sanitary measures which should be maintained in reservoirs are outlined. G.I.P.

(996e) Larval *Hexamermis albicans* were found in 15% of 443 caterpillars of *Porthetria dispar* from a forest in the Voronezh region. 100 caterpillars were placed singly into damp soil. The mermithids left their host when the caterpillars were in the third, fourth or, more rarely, fifth stage of development. Under laboratory conditions this occurred at night and the worms coiled up 20–25 cm. deep in the soil. The hosts died subsequently. The distribution of *H. albicans* in the ground coincided with areas of *P. dispar* infestation; the parasites were mainly found under oak trees attacked by the insects. G.I.P.

(996f) Fifty-nine specimens of *Gongylonema pulchrum* were found in the oesophageal mucosa of a camel autopsied at the Uzbekistan Agricultural Institute. The histo-pathological changes are described. G.I.P.

(996g) The survival of geohelminth eggs on food products was examined by placing eggs of *Ascaris*, *Trichuris* and *Enterobius* on four groups of food. On foods which contained little moisture (e.g. bread products, pumpkin seeds) or 15% to 85% of fat the eggs died; on drinks and sweets they survived but did not develop; on jams, honey and fresh and preserved garden produce they developed to the infective stage. The best of the five methods tested for the destruction of these eggs was that in which the foods were treated with ultra-violet rays from the quartz-mercury vapour lamp. G.I.P.

(996h) The influence of external factors on different stages in the life-cycle was investigated chiefly on *Dactylogyrus vastator* and *D. solidus* from carp. Temperature exerted the greatest influence. The maximum laying of viable eggs and speediest development was produced by an increase of the temperature to 24°C. to 26°C. for *D. vastator* and to 15°C. for *D. solidus*. Temperatures above these maxima were lethal to the helminths. Sunlight gave partial or total destruction of the free-living larvae. *D. vastator* died within five minutes in a 5% solution of sodium chloride, while magnesium sulphate remained ineffective. A 3·5:1·5 mixture of the two salts was 100% lethal and less harmful to the fish. Only 30% to 40% of *D. solidus* died after the salt baths. G.I.P.

PAPERS ON HELMINTHOLOGY PRESENTED TO ACADEMICIAN K. I. SKRYABIN ON HIS 75th BIRTHDAY. Moscow: Izdatelstvo Akademii Nauk SSSR, 812 pp. (cont.)

i. BELOPOLSKAYA, M. M., 1953.—" The helminth fauna of snipe in the U.S.S.R.] pp. 47–65. [In Russian.]

j. BONDAREVA, V. I., 1953.—[On the validity of some species of *Multiceps*.] pp. 66–71. [In Russian.]

k. BRUDHAYA, S. M., 1953.—[The use of allergic skin reactions for the diagnosis of ascariasis during the period of larval migration.] pp. 72–84. [In Russian.]

(996i) The helminth fauna of 220 snipe (belonging to 29 species) shot in Primore and East Murmansk was composed of 29 trematode, 33 cestode, 11 nematode and 8 acanthocephalan species. Known species are listed with their hosts and new species are described and figured. *Spelotrema arenaria* n.sp. from *Arenaria interpres* is distinguished from other species of this genus by its bean-shaped male papilla. *Skrjabinovermis vesiculata* n.g., n.sp. from *A. interpres* belongs to Philophthalmidae and resembles *Cloacitrema* in possessing a seminal vesicle, which is enclosed in the genital bursa, and a seminal receptacle. *Proterogynotaenia variabilis* n.sp. from *Squatarola squatarola* from Primore has eight to nine proglottides and hooks 34–35 $\mu$ and 8 $\mu$ long, thus resembling *P. flaccida*, but differs from it by having only 18 to 19 testes and hooks of different shape. In representatives from East Murmansk, conditionally placed in this species, the number and size of the hooks were variable, which apparently are peculiarities of this species. *Dicranotaenia crocethia* n.sp. is described from *Crocethia alba*. Specimens of *D. guschanskoi*, known from *Calidris minuta*, were now found also in *C. alpina*, *C. ruficollis* and *Crocethia alba* and exhibited morphological differences from those described by Krotov in 1952. The description of proglottides of *Gryporhynchus retirostris*, omitted by Krabbe, is given. A new type of spirurid, *Parahistiocephalus parvialatus* n.g., n.sp. is founded on one male from *A. interpres*. The genus is nearest to *Histiocephalus* but lacks a cuticular collar, has sessile papillae and two dissimilar spicules. Two new species found in plovers are *Viktorocara charadrii* n.sp. from *Charadrius hiaticula* and *Mediorhynchus orientalis* n.sp. from *C. dubius curonicus*. G.I.P.

(996j) Varying numbers of oncospheres of *Multiceps multiceps*, obtained from previously infected puppies, were fed to rabbits. Three sheep served as controls. No signs of infection were seen on autopsy of the rabbits, but coenuri were found in the brain of all the sheep. Sheep and rabbits were similarly exposed to infection with *M. skrjabini*. The rabbits remained uninfected, three sheep had dead coenuri in the muscles. In one, numerous calcified nodules, apparently remains of a coenurus, were found in the liver and in four infection was absent, probably due to an increased resistance of the sheep. Cross infections with *M. serialis* were not made. These results lead Bondareva to deny the identity of any one of the three species with the other two. She considers the difference between *M. multiceps* and *M. serialis* to be one of adaptation to different hosts and localizations and indicates the necessity of further experiments to settle this problem. G.I.P.

(996k) The use of allergic skin reactions in the early diagnosis of ascariasis was tested on 27 rabbits which had been infected with 5,000 *Ascaris lumbricoides* eggs each. 12 rabbits served as controls. Ascaris antigens No. 1 (the polysaccharide fraction), No. 2 (an antigenic complex analogous to the whole antigen obtained from bacteria) and No. 3 (a physiological solution extract) were injected in amounts of 0·1 c.c., 5–7 cm. apart on a plucked patch of skin. The antigens were in dilutions from 1:10 to 1:10,000. The optimal period for the reactions was from 8 to 30 days after infection. The tabulated results show that all three antigens gave good results and that specific antigen No. 1 at 1:100 dilution was the most effective and convenient to use, the reaction becoming positive from the 5th to 7th day after infection. The eosinophil reaction of the blood usual on the 6th to the 8th day could be used as a secondary means of diagnosis of the early stages of ascariasis. G.I.P.

PAPERS ON HELMINTHOLOGY PRESENTED TO ACADEMICIAN K. I. SKRYABIN ON HIS 75th BIRTHDAY. Moscow: Izdatelstvo Akademii Nauk SSSR, 812 pp. (cont.)

l. BIKHOVSKAYA-PAVLOVSKAYA, I. E., 1953.—[The trematode fauna of birds in the Leningrad district.] pp. 85–92. [In Russian.]

m. BURDELEV, T. E., 1953.—[The study of the seasonal dynamics of the more important helminth diseases of predatory animals in the Moscow Zoological Gardens.] pp. 93–98. [In Russian.]

n. VASILKOVA, Z. G. & GEFTER, V. A., 1953.—[On the length of the season during which infection with Ascaris can occur.] pp. 99–105. [In Russian.]

o VSEVOLODOV, B. P., 1953.—[The pathology of helminth diseases of Ondatra.] pp. 106–114. [In Russian.]

p. VORONTSOV, S. A., 1953.—[The therapeutic and prophylactic activity of phenothiazine against *Ascaridia* and *Heterakis* infections in fowls.] pp. 115–124. [In Russian.]

(996l) The helminths found during the examination of 108 birds, belonging to 30 species from the Leningrad region, are tabulated under their hosts. The trematode fauna of the insectivorous and graminivorous birds was low in species and in number. The majority were at various stages of development in young as well as adult birds indicating local infection; but Dicrocoeliidae were present only in adults and had been acquired in the South. The genus *Laterotrema* is considered to be a typical representative of Lecithodendriidae. Young and adult specimens of *Leyogonimus testilobatus* n.sp. were found in *Garrulus glandaris*. It measures 0·85–1·2 mm. long, the cuticle carries spines, the pharynx is very muscular and a prepharynx is absent. A large irregularly lobed ovary lies anterior to the ventral sucker. The testes are deeply lobed even in the young worms. R.T.L.
G.I.P.

(996m) From faecal examinations for *Toxocara* of Felidae and Ursenidae in the Moscow Zoo, it is concluded that the highest infections of lions, tigers and pumas occur in the autumn to winter period and that in this region these animals should be wormed 10 to 15 days before they are transferred to winter housing. Bears should be treated twice a year, once at the beginning of spring. The highest infection was in July. G.I.P.

(996n) The development of *Ascaris lumbricoides* eggs in the soil was observed by placing on and in the soil, infected faeces and eggs on filters in special containers which retained natural conditions. Independently of when placed in the soil, the eggs reached the larval stage only in July and August when the soil temperature was about 20° C. In samples 2 cm. deep in the soil some larvae remained viable until May of the following year. The greatest numbers of eggs were killed by microclimatic conditions during March and April and by a temperature of over 40° C. and ultraviolet sun rays in the hot summer months. The population became infected between July and October. Such infection was shown by precipitin reaction to have taken place in 48·7% (in July) and 45·7% (in September) of the people whose faecal examinations had been negative. G.I.P.

(996o) The pathologic processes produced by *Rodentocaulus ondatrae* and *Echinococcus multilocularis* in *Ondatra*, which has fairly recently become acclimatized in Russia and is now a valuable fur-bearing animal, are described in detail. G.I.P.

(996p) Over 42,000 chickens were treated for ascaridiasis and heterakiasis with 2·0 to 2·2 gm. for chicks and 2·5 to 3·0 gm. per kg. body-weight for adults of phenothiazine in a 1:15 mixture with damp chicken food by free feeding after a 16 hour hunger diet. Two thirds of the dose were given on the first and one third on the second morning. Weak, poorly feeding chickens and those on highly infected farms were treated individually by intubation of 10–11 ml. per kg. body-weight of a 20% aqueous emulsion. Chicks two weeks to 3 months old ate the mixture more readily than older ones. 192 autopsies showed that the treatment was 100% effective against *Ascaridia*, 61% to 100% against *Heterakis* and considerably lowered *Raillietina* infections. The general condition of the animals improved and egg laying increased by 20%

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q. GVOZDEV, E. V., 1953.—[A new trematode from the gall-bladder of the bat.] pp. 125–126. [In Russian.]
r. GEVONDYAN, S. A., 1953.—[The precipitin reaction around living larvae in serum from sheep infected with *Muellerius*.] pp. 127–132. [In Russian.]
s. GELLER, E. R. & BABICH, L. A., 1953.—[The biology of *Contracaecum bidentatum* (Linstow, 1899).] pp. 133–138. [In Russian.]
t. GERBILSKI, V. L., 1953.—[The ability of migrating ascarid larvae to provoke clinical symptoms of non-helminthic diseases by an asymptomatic infection.] pp. 139–146. [In Russian.]

to 35%. Even higher doses of up to 20 gm. per kg. body-weight given individually were not harmful. Thiodiphenylamine was equally effective. As a prophylactic, phenothiazine was tested on 12,000 chicks 27 days to 4½ months old in doses of 0·04–0·2 gm. per kg. of body-weight per morning over periods of 12 to 35 days. A dose of 0·15–0·2 gm. per kg. given for 30–35 days in a 1:200 mixture proved beneficial to the chicks, was 100% effective against *Ascaridia* and to a lesser degree against *Heterakis* and *Raillietina*. Reinfection with *Ascaridia* was prevented for two months. G.I.P.

(996q) *Castroia nyctali* n.sp. from *Nyctalus noctula* in Kazakhstan SSR differs from *C. silvae* and *C. amplicava* in having vitelline glands of large, close follicular structure. There is no oesophagus. The ovary is anterior to the ventral sucker and in the mid line. The ventral sucker is 0·11 mm. and the oral sucker 0·12 mm. in diameter and the latter is some distance from the anterior end. G.I.P.

(996r) The precipitin reaction with live *Muellerius* larvae for the diagnosis of muelleriasis of sheep is positive in respect of *Protostrongylus* and *Dictyocaulus filaria*. The reaction is sensitive to the presence of even single third-stage larvae in the lungs. In lambs which had been infected with 1,000, 2,000 and 10,000 larvae obtained from a snail in the summer, the reaction appeared five to eight days after the infection. The reaction disappeared 9–29 days before death of the sheep, although worms were present and larvae passed with the faeces. A fall in infection was accompanied by a lowering of intensity of the reaction, and after a change to the latent form the reaction continued with interruptions and at low intensity. In sheep infected with winter larvae a low intensity reaction (25% of larvae reacted positively) appeared 10 to 28 days after infection. This indicates weak reactivity of the host to those larvae whose development is slowed down. G.I.P.

(996s) The life-cycle of *Contracaecum bidentatum* is as follows: the fertilized egg is laid at the 8–16 blastomere stage into the intestinal lumen of the sterlet and is excreted into the water; the larva moults twice, once before hatching, and retains the egg membranes. The freshly emerged larva is 0·25–0·3 mm. long. The third and infective larval stage is reached in the intermediate host, apparently a *Gammarus*. The fourth moult, followed by maturity, takes place in the final host, the sterlet. The female genital system and the various stages of development are described and figured. G.I.P.

(996t) Migrating Ascaris larvae can provoke botuline toxic infection. Of 14 mice infected first with ascarid larvae and two or eight hours later with *Bacillus botulinus* spores six died due to toxins produced by the bacillus. Another 20 mice infected with ascarid larvae received 500 million spores two days later. Of the 12 that subsequently died, eight were tested bacteriologically and four were positive. In both experiments, mice infected with larvae or spores only, were used as controls. It is concluded that necrotic centres are either caused directly through the tissue destruction left by the larvae, particularly in the lungs and liver, or through disturbance of the nerve trophisms of the organ by toxins. Such centres favour the development of spores and more toxin production, which causes death of the host. G.I.P.

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u. GINETSINSKAYA, T. A., 1953.—[The helminth fauna of migratory snipe of the Volga delta.] pp. 147–156. [In Russian.]
v. GNEDINA, M. P., 1953.—[Experimental treatment of onchocerciasis in cattle with ditrazin.] pp. 157–159. [In Russian.]
w. GORSHKOV, I. P., 1953.—[Pathological-anatomical changes in the stomach of a horse caused by *Draschia* infection.] pp. 160–169. [In Russian.]
x. GRIGORYAN, G. A., 1953.—[The determination of the clinical course of acute fascioliasis in sheep caused by *Fasciola gigantica*.] pp. 170–175. [In Russian.]
y. GUBANOV, N. M., 1953.—[A new subfamily of trematodes, Liliatrematinae n.subf., from marine fish-eating birds.] pp. 176–183. [In Russian.]
z. GUMENYUK, T. G., 1953.—[Investigation of the helminth fauna of cats, dogs, rats and mice in Chernovtsy.] pp. 184–187. [In Russian.]

(996u) Of 105 snipe caught in the Volga Delta, chiefly during their autumn migration, 60·9% were infected with helminths. 48·4% harboured cestodes, 25·7% trematodes, 11·4% nematodes and 5·8% harboured acanthocephalans. A table of the percentage infections of the eleven bird species and one of the infections of snipe from various parts of Russia are given. The 11 cestode, 11 trematode, 5 nematode and one acanthocephalan species are listed with a short note on each species. Infection of birds, particularly with trematodes, is shown to be lower during their migration than during their nesting period. G.I.P.

(996v) A new compound, Ditrazin, in doses of 0·1 [no units are given] per kg. body-weight in distilled water in the ratio of 1:1·5 was injected subcutaneously in the neck region, in the course of three to four days, of 24 cattle with onchocerciasis. The animals were autopsied from 3 to 17 days after the last injection. *Onchocerca gutturosa* in the neck tendon had become deformed but some worms and the micro-onchocercae remained viable, except in 12 cattle which had received Ditrazin series No. 3. In 11 of these only dead forms were found. *O. lienalis* were not affected. The micro-onchocercae of both species which were localized in the skin, remained viable. G.I.P.

(996x) Thirteen lambs were infected with 5 to 50 metacercariae of *Fasciola gigantica* per kg. body-weight. All, except one, died from a heavy infection after 77 to 99 days. The clinical symptoms and changes in the blood did not appear earlier than two months after the infection. In heavy infections progressive anaemia occurred and was the basic cause of death. The cephaline test was not specific and cannot be recommended for the early diagnosis of this disease in sheep. G.I.P.

(996y) From piscivorous birds in the Kuril Islands Gubanov describes and figures: (i) *Liliatrema skrjabini* n.g., n.sp. from *Phalacrocorax urile*, *P. pelagicus*, *Cepphus carbo* and *Larus argentatus*. The intermediary is *Myoxocephalus scorpius*; (ii) *L. sobolevi* n.sp. from *P. urile* and *P. pelagicus*. A new subfamily of Allocreadiidae, Liliatrematinae n.subf., is created for the new genus. It differs from Allocreadiinae in the structure of its oral sucker which has "muscular petals" with apical papillae, from Crepidostomatinae by its short cirrus bursa, and from both in having a well developed uterus and a V-shaped excretory system. G.I.P.

(996z) In the Chernovstsy region of the Ukraine 73·9% of 73 dogs, 90·7% of 43 cats, 77·1% of 105 rats and 76·1% of 105 house-mice were found infected with nematodes and cestodes. Trematodes and acanthocephalans were absent. The incidence of each of the 20 helminth species is tabulated. G.I.P.

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ba. GUSHANSKAYA, L. K., 1953.—[On the family Desmidocercidae Cram, 1927 and its position in the nematode classification.] pp. 188–204. [In Russian.]

bb. DAVTYAN, E. A., 1953.—[Acute fascioliasis in sheep.] pp. 205–210. [In Russian.]

bc. DELYAMURE, S. L., 1953.—[Characteristic properties of the helminth fauna of pinnipeds and cetaceans in the light of their oecology and phylogeny.] pp. 211–218. [In Russian.]

bd. DEMSHIN, N. I., 1953.—[Characteristic structure of the genital cone of Trichoneminae.] pp. 219–225. [In Russian.]

be. DEMIDOV, N. V., 1953.—" Subcutaneous application of carbon tetrachloride for fascioliasis in sheep.] pp. 226–233. [In Russian.]

(996ba) Gushanskaya agrees with Yorke & Maplestone (1926) who founded *Desmidocercella* for *Desmidocerca numidica* Seurat, 1920. Following Dubinin (*Parazitologicheskii Sbornik*, 1949, **11**, 126–160) she transfers *Pharyngosetaria marcinowskyi* Lyubimov, 1937 nec *Filaria marcinowskyi* Skryabin, 1923 to *Desmidocercella* as *D. lubimovi* nom.nov., as she does not agree with Dubinin that this species and that made by Skryabin in 1923 are synonyms of *D. numidica*. Desmidocercidae, which contains *Desmidocerca*, with its type and only species *D. aerophila*, and *Desmidocercella*, are placed in the Spirurata. *Desmidocercella* is divided into (i) *Desmidocercella* n.subg. which is characterized by the anterior position of the vulva in the body and now contains *D. numidica*, *D. leiperi* Singh, 1948 and *D. lubimovi*, and (ii) *Skrjabinocercella* n.subg., characterized by the posterior position of the vulva and contains *D. incognita* and *D. skrjabini*. *Pharyngosetaria butoridi* is transferred to *Desmidocercella butoridi* n.comb. Keys to species of the two subgenera are given and all the species are described. G.I.P.

(996bb) It has been experimentally determined that sheep infected with *Fasciola gigantica* die 51 to 109 days after the infection, depending on the strength of the infection apparently due to a heavy flow of blood from the liver into the peritoneal cavity. The young flukes migrate into the bile-ducts on the 66th to 109th day and reach maturity in 94 to 107 days after infection. Sheep were infected with 15 metacercariae per kg. body-weight. Of ten sheep which were treated with either 60 gm. of hexachlorethane or 6 ml. of carbon tetrachloride, given in three doses on the 38th, 40th and 42nd day after infection, five died while all those survived which were similarly treated during later phases of the disease, i.e. on the 68th, 70th and 72nd day. The five control sheep died after 78 to 112 days. G.I.P.

(996bc) A study of the systematic positions of hosts of the helminth families found in pinnipeds and cetaceans showed that not one of the 15 families parasitic in pinnipeds are specific for this group. This is explained by the fact that pinnipeds are littoral animals in contact with aquatic animals, including birds, and with terrestrial mammals. In contrast cetaceans are pelagic and are not in contact with terrestrial mammals. Their fauna includes the families Brauninidae and Crassicaudidae which are found in cetaceans only and Campulidae and Pseudallidae which are characteristic for this group. This difference is further discussed in the light of the oecology and phylogeny of the two groups. G.I.P.

(996bd) Demshin briefly describes the genital cone of various species of Trichonematina from horses. The genital cone is of complex structure and in his opinion is of great significance in the differentiation of species of this family. G.I.P.

(996be) When carbon tetrachloride was injected subcutaneously in doses of 1–10 ml to 160 sheep and 10 goats with fascioliasis no harmful effects were observed. The results are given separately for each of ten experiments. High efficiency was obtained in tests on sheep in Yaroslavl'. The low efficacy reported form Novgorod is attributed to insufficient doses of the anthelmintic. G.I.P.

PAPERS ON HELMINTHOLOGY PRESENTED TO ACADEMICIAN K. I. SKRYABIN ON HIS 75th BIRTHDAY. Moscow: Izdatelstvo Akademii Nauk SSSR, 812 pp. (cont.)

bf. DUBNITSKI, A. A., 1953.—[*Taenia pisiformis* as a possible parasite of Arctic foxes.] pp. 234–236. [In Russian.]

bg. ERMOLAEVA, E. N., 1953.—[The influence of anthelmintic treatment of sheep with phenothiazine on the dynamics of *Dictyocaulus* infection.] pp. 237–239. [In Russian.]

bh. ERSHOV, V. S., KRIKUNOV, M. S., PLAKHOTNYA, R. A. & GOROBETS, A. D., 1953.—[A new method for the diagnosis of ascariasis in pigs.] pp. 240–243. [In Russian.]

bi. ZHELTVAI, V. V., 1953.—[On the study of tapeworm diseases of fowls in the Transcarpathian region.] pp. 244–250. [In Russian.]

bj. IVANOVA, P. S., 1953.—[Experimental control of fascioliasis in sheep by periodic anthelmintic treatment and rotational grazing.] pp. 251–253. [In Russian.]

(996bf) Rabbit meat and internal organs are being used as food in most animal breeding farms in Russia. Dubnitski finds that 46·2% to 82·7% of the rabbits are infected with cysticerci of *Taenia pisiformis*. In members of the marten family the cysticerci are digested and are not of pathogenic importance. When cysticerci were fed to six polar foxes only one out of 132 developed and reached 10 mm. in length in about six weeks. In the controls, 21% of the cysticerci fed to two red foxes and 38·9% of those fed to five dogs survived. Thus the polar fox is not a host for *T. pisiformis* while the red fox and dogs are obligatory hosts. Infected rabbits can be fed raw to Mustelidae and polar foxes but should be cooked for red foxes. G.I.P.

(996bg) In experiments lasting from May to December, 6,000 sheep (3,000 born during the current year) were treated for lungworms in South Kazakhstan where the infection drops during summer pasturing. The first group of sheep received phenothiazine in a single dose of 0·5 gm. per kg. body-weight and a phenothiazine-food mixture daily, the second received the same single dose and the mixture for one day and the third only the mixture for one day. The mixture used until April was 1:400 and thereafter 1:200. In controls, which had received no phenothiazine, *Dictyocaulus* infection increased throughout the experimental period to a maximum of 80% of adults and 68% of young sheep in May. Graphs of the changes in percentage *Dictyocaulus* infections (by Vajda's method) during the months show that the best effect was obtained with group one and that in all three groups of sheep no larvae were found during the peak period from March to May. G.I.P.

(996bh) For the diagnosis of ascariasis in pigs, 0·05–0·1 ml. of ascaris antigen, in the dilution of 1-200 in distilled water, was injected intradermally into the ear region and gave a positive reaction in the presence of adult worms and of larval stages 40 days after infection. In piglets, the reaction remained positive for 30 days after they had been freed from infection and disappeared after 40 days. G.I.P.

(996bi) In fowls on farms in the Transcarpathian region Zheltvai has found *Raillietina echinobothrida*, *R. cesticillus*, *Davainea proglottina* and *Choanotaenia infundibulum*. G.I.P.

(996bj) The best treatment for fascioliasis hepatica in sheep suitable for the local conditions in the Ivanovo region, was found to be worming with 2·0 carbon tetrachloride [units are not given] every two-and-a-half months throughout the grazing period, i.e. in early April, July and September, with a change of pasture after the second and third treatment. The average number of infected sheep on four farms was 30·6% in April after a preliminary treatment in February. It fell to 2·2% in June and to 1·8% in September. After the third treatment the infection had fully cleared. G.I.P.

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bk. IVASHKINA, E. E., 1953.—[Phenothiazine tested against parabronemiasis of camels (*Camelus bactrianus*).] pp. 254–257. [In Russian.]

bl. IVASHKIN, V. M., 1953.—[*Thelazia* disease of the eye of yaks and cattle.] pp. 258–262. [In Russian.]

bm. IBRAGIMOV, K. Z., 1953.—[The use of phenothiazine in strongylosis and ascariasis in donkeys.] pp. 263–270. [In Russian.]

bn. KADENATSII, A. N., 1953.—[*Opisthorchis* of wild foxes in western Siberia.] pp. 271–272. [In Russian.]

bo. KAMALOV, N. G., 1953.—[A new case of *Gongylonema pulchrum* Molin, 1857 infection in man.] pp. 273–276. [In Russian.]

bp. KAMALOVA, A. G., 1953.—[Comparative morphology of the eggs of *Taenia saginata* and *T. solium*.] pp. 276–283. [In Russian.]

(996bk) Phenothiazine in doses varying from 75 gm. to 500 gm. given to a small number of experimental camels was ineffective against *Parabronema skrjabini* in February when the worms were immature. In May, 500 gm. were 100% efficient against *Parabronema* and trichostongylids, while 300–400 gm. lowered *Parabronema* infection by 74% to 87·7%. Smaller doses were ineffective. A dose of 1·0 kg. did not cause any clinical symptoms. 300–500 gm. of the anthelmintic given to 40 camels had a noticeable therapeutic effect. G.I.P.

(996bl) In Mongolia thelaziasis of yaks and cattle is caused by *Thelazia gulosa* and *T. skrjabini*. The intermediary of *T. gulosa* is *Musca amica*. Clinical symptoms occurred from July to September and were very marked in yaks but comparatively slight in cattle. Phenothiazine given orally in doses of 0·1–0·25 [units are not given] per kg. body-weight acted on the worms in the lachrymal ducts, stimulated epiphora in 40% to 63% of the animals but was ineffective in yaks with deep keratitis. Ichthyol and iodoform ointments in concentrations of 1:30 to 1:40 of white vaseline had some therapeutic effect. G.I.P.

(996bm) Ibragimov discusses the effect of phenothiazine in various doses against strongyle and parascarid infections in donkeys in Uzbekistan where, in some districts, these animals are the only means of transport. G.I.P.

(996bn) In the Omsk region, 106 foxes, 9 wolves and 29 skunks were autopsied. 4·7% of foxes, one skunk and none of the wolves were infected with *Opisthorchis felineus*. *Echinococcus* was found in 30% of the wolves and 28·4% of foxes and *Trichinella* in all the wolves and in a few foxes. This unusually heavy infection of *O. felineus* in foxes is explained by the drying out of streams and lakes in the dry summer of 1951 making fish accessible to foxes as food. G.I.P.

(996bo) Worms, identified as *Gongylonema pulchrum*, were recorded from the mouth of a man who had been living for seven years in Tiflis and had come to the local clinic complaining of headaches. Later he had epileptiform attacks and a temperature of 38°C. This is the second report of the infection in man in Russia. G.I.P.

(996bp) The actual maturity of proglottides of *Taenia saginata* and *T. solium* cannot be determined by their measurements or morphology as they may still contain immature eggs. Mature eggs and oncospheres of *T. solium* are smaller and more spherical than those of *T. saginata*. The eggs of *T. solium* are 0·052–0·077 mm. × 0·047–0·077 mm. and the oncospheres 0·035–0·045 mm. × 0·033–0·043 mm., while those of *T. saginata* are 0·057–0·087 mm. × 0·047–0·077 mm. and 0·037–0·047 mm. × 0·033–0·043 mm. respectively. The two species are alike in the shape and size of their embryos, which are 0·027–0·028 mm. × 0·023–0·024 mm., and in the thickness of the oncosphere membrane which is 0·0035–0·0060 mm., but most frequently 0·0045 mm. G.I.P.

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bq. KARABAEV, D. K., 1953.—[Changes in the helminth fauna of sheep, imported into Bet-pak-dala (Central Kazakhstan).] pp. 284–287. [In Russian.]
br. KARMANOVA, G. A. & MURTAZAEV, A., 1953.—[The helminth fauna of *Gazella subgutturosa*.] pp. 288–292. [In Russian.]
bs. KARPOVICH, V. N., 1953.—[The helminth fauna of *Desmana moschata* Linn.] pp. 293–300. [In Russian.]
bt. KASIMOV, G. B., 1953.—[A short survey of the helminth fauna of gallinaceous birds in the U.S.S.R. according to geographical regions.] pp. 301–305. [In Russian.]
bu. KASYANOV, I. S., 1953.—[A study of the diagnosis and epizootiology of *Skrjabinotrema* disease in sheep.] pp. 306–312. [In Russian.]
bv. KLESOV, M. D., 1953.—[A study of the epizootiology of thelaziasis in cattle.] pp. 313–316. [In Russian.]

(996bq) Karabaev discusses the change in the helminth fauna of sheep which were imported to Bet-pak-dala Steppe from mountainous Kazakhstan. The sheep acquired from the local wild animals *Nematodirus archari*, *N. dogeli*, *N. gasellae*, *N. mauritanicus* and *Skrjabinodera saiga*. These species are new to sheep. Five other species were lost and in others the intensity of infection changed. G.I.P.

(996br) Seven autopsied *Gazella subgutturosa* were all infected with helminths. The eight species found also parasitize sheep. *Cysticercus ovis*, *Gongylonema pulchrum* and *Nematodirella cameli* were new for this host, *N. cameli* is also reported for the first time from Uzbekistan. This gazelle is considered to be a reservoir host for a series of helminths of sheep. G.I.P.

(996bs) Of seven *Desmana moschata*, a valuable fur-bearing animal, one was infected with helminths. Four helminths were found, viz., *Thominx marii*, larvae of *Porrocaecum* sp., *Agamospirura* sp. and larval *Alaria alata*. The two latter are described and figured. *D. moschata* is a reservoir host for *A. alata*. G.I.P.

(996bt) The helminth fauna of gallinaceous birds characteristic for Berg's (1936) seven geographical zones of Russia is discussed. The wide distribution of ascarids of these birds in northern Russia (marshplains and forest zones) is completely reduced in southern districts (steppe and mountainous zones). The distribution of Oxyurata is just the opposite, while Spirurata are best represented in the forest zone and absent in the swamp zone. Large numbers of Dicrocoeliidae are characteristic for mountainous districts. G.I.P.

(996bu) *Skrjabinotrema ovis* is wide-spread in sheep in Central Asia. Six methods of faecal examination for the diagnosis of the infection were compared and the best results were obtained by successive decantations, which was positive for 92·8% of infected sheep. The results were the same without or with centrifuging but the latter method was quicker. Telemann's method was positive for 85·7% of the sheep. At post-mortem an average of 7,363 worms per sheep were collected. They were localized in the duodenum and jejunum. G.I.P.

(996bv) An experiment on 17 calves in the Ukraine showed that when kept in cow sheds they remained uninfected but when pastured 15 of the calves became infected with *Thelazia rhodesii*. One of three calves was retained in the shed and did not become infected owing to the absence of the insect intermediate host, the other two were placed on pasture in June and became infected from the second day. In July infections ceased but were again noticed in August. This shows that the intermediate host was free from infective larvae in July owing to the disappearance in June of wintered adult *Thelazia*. The first females of the summer generation matured in the second half of July and reinfected pastures with larvae in August. Throughout September the calves became infected only three to four times; this is explained by the lowered activity of the flies. G.I.P.

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bw. KOLESNIKOV, N. M., 1953.—[Pathological and histological changes caused by *Ornithobilharzia turkestanicum* in the zebu.] pp. 317–322. [In Russian.]

bx. KOPIRIN, A. V., DOBRIKOV, D. M. & BURIKOVA, Y. N., 1953.—[On the epizootiology of *Muellerius* in sheep.] pp. 323–325. [In Russian.]

by. KROTOV, A. I., 1953.—[On the cestode fauna of the U.S.S.R.] pp. 326–339. [In Russian.]

bz. KURASHVILI, B. E., 1953.—[The helminth fauna of birds used for food in Georgia.] pp. 340–346. [In Russian.]

(996bw) The pathological changes caused by *Ornithobilharzia turkestanicum* in various organs of *Bos indicus* from Azerbaijan are described. The liver was most heavily infected; the eggs were surrounded by cellular tissue forming nodules, growth of the connective tissue was frequently observed and necrotic centres were present in the parenchyma. In spite of the small number of parasites, marked cirrhotic changes were seen in the lungs. G.I.P.

(996bx) Sheep brought from Yaroslavl' to the Omsk region for breeding were infected with *Muellerius*. The region proved free of this infection and *Limnaea* and *Planorbis* snails collected on pastures were uninfected but could be experimentally infected with *M. capillaris* larvae. One of the infected sheep had been kept apart for observation and died after three years. As reinfection could not have occurred, the life span of these worms in sheep is more than three years and four months. G.I.P.

(996by) This is a continuation of the work published in *Trud. gel'mint. Lab.*, 1951, **5**, 130–137 and 1952, **6**, 259–272 [for abstracts see Helm. Abs., **20**, No. 942r and **21**, No. 961x] on the helminth fauna of vertebrates from the Far East and deals with Anoplocephaloidea. Short notes are given for the 46 species found, including five new species which are described and figured. *Paricterotaenia olgae* n.sp. from *Scolopax rusticola* is characterized by a large spherical scolex and 12 diorchid hooks, 0·032 mm. long. *Choanotaenia cholodkowskyi* n.sp. from *Alauda arvensis lönnbergi* possesses 18 rostellar hooks, but differs from *C. cayennensis*, *C. chandleri*, *C. macracantha* and *C. tringae* in having smaller hooks, 0·019 mm. long; while *C. secunda* has hooks of similar size but 12 more in number. *C. dogieli* n.sp. from *Calidris tenuirostris* has 20 diorchid hooks 0·067 mm. in length. Furthermore in *C. dogieli* there are 30 to 65 testes and eggs 0·044 × 0·035 mm. in size, while *C. cayennensis* has 18 to 20 testes and smaller eggs. *Malica skrjabini* n.sp. was found in *Limosa limosa melanuroides*, while the remaining four species of the genus are known from snipe in India and Ceylon. The new species which possesses 16 to 22 hooks, 0·081–0·124 mm. long, also differs in the morphology of the proglottides. *Similuncinus pavlovskyi* n.sp. from *Pinicola enucleator sachalinensis* is distinguished from *S. dacelonis* and *S. totani-ochropodos* by the morphology of its proglottides and its ten hooks 0·028 mm. long. *Lateriporus accophylus* is transferred to *Diagonaliporus* on the basis of the diagonal passage of the genital pores and the character of development of the uterus. The following are new host records: *Paranoplocephala brevis* in *Clethrionomys rutilus amurensis*; *Catenotaenia pusilla* in *C. rutilus amurensis* and *C. rufocanus*; *Raillietina crassula* in *Streptopelia orientalis orientalis*; *Anomotaenia borealis* in *Phylloscopus fuscatus fuscatus*, *Muscicapa cyanomelana*, *Acrocephalus bistrigiceps* and *Turdus chrysolaus*; *A. depressa* in *Hirundapus caudacutus*; *Dilepis undula* in *Spodiospar cineraceus* and *T. chrysolaus*. *D. hamasigi* is reported for the first time from Russia. G.I.P.

(996bz) The helminth fauna of game birds examined in Georgia comprised 74 species. 24 were trematodes, 15 cestodes, 33 nematodes and 2 acanthocephalans. Of the sixty species which were new for Georgia, *Apatemon gracilis*, *Diplostomum indistinctum*, *Ophiosoma patagiatum*, *Chandlerella sinensis*, *Diplotriaena tinamicola* and *D. pycnonoti* are also reported for the first time from Russia. The dependence of the fauna on the season and on the mode of life and age of the birds is discussed. G.I.P.

PAPERS ON HELMINTHOLOGY PRESENTED TO ACADEMICIAN K. I. SKRYABIN ON HIS 75th BIRTHDAY. Moscow: Izdatelstvo Akademii Nauk SSSR, 812 pp. (cont.)

ca. KURTIEVA, L., 1953.—[A new nematode from the intestine of birds in Turkestan SSR, *Strongyloides turkmenica* n.sp.] pp. 347–348. [In Russian.]

cb. LEVASHOV, M. M., 1953.—[On the study of the helminth fauna of birds of the U.S.S.R. (Contribution to the knowledge of the helminth fauna of the U.S.S.R.).] pp. 349–356. [In Russian.]

cc. LEIKINA, E. S., 1953.—[The problem of immuno-diagnosis of early stages of ascariasis.] pp. 357–365. [In Russian.]

cd. LUKASHENKO, N. P., 1953.—[The epizootiology of trichinelliasis.] pp. 366–371. [In Russian.]

ce. LISENKO, A. A., 1953.—[The application of anthelmintic treatment of the larval stages in haemonchiasis in sheep.] pp. 372–374. [In Russian.]

(996ca) *Strongyloides turkmenica* n.sp. is described and figured from *Himantopus candidus* in Turkmenian SSR. The size of its eggs is 0·035–0·042 × 0·021–0·024 mm. In *S. avium* from chickens in North America, the only other species of this genus known in birds, the eggs measure 0·052–0·056 × 0·036–0·040 mm. G.I.P.

(996cb) Levashov brings together the literature on the helminth infections of birds in Russia and gives a table of the results as the total helminth infection and also, separately, infection with each of the four groups of helminths, for the various avian families. G.I.P.

(996cc) Ring precipitation was tested as a diagnosis of early ascariasis using antigens prepared from mature female *Ascaris lumbricoides* (in dilutions from 1:2 to 1:50,000) tested on 48 guinea-pigs which had been infected with 100 to 1,000 eggs. Uninfected animals served as controls and precipitation on living larvae was used as control of the reaction. In a second experiment the guinea-pigs were first infected with either 600 or 1,000 eggs and reinfected after one month with the same dose. One group received 100 eggs followed by 1,000 eggs. Uninfected animals and animals with primary infections only, were used as controls. The results, set out in tables, show that primary infection stimulated the production of specific antibodies and, as proved by the reactions on larvae and the antigen titre, their concentration increased up to the 20th to 30th day after infection; after 60 days they disappeared from the blood. The reaction around living larvae gave better results than ring precipitation, particularly early in the infection when the concentration of antibodies was low, but this is not practicable for mass testing. The number of antibodies formed after reinfection was minimal as compared with that formed after the primary infection, except in that group which had received a small first dose of eggs. The number of larvae found in the body was 3 to 15 times less. The activity of five antigens was examined using 60 guinea-pigs injected either with 1 ml. of a 10% tissue emulsion or with 25 mg. of fractionated antigen. 17 days later the animals were infected with 1,000 eggs and 8 to 9 days later the average number of larvae in the musculature of the controls was 116, of the animals immunized with the extract of Ascaris tissue dried at low temperature it was 22·7, and of those with the acid soluble protein fraction it was 25·1. The tissue extract is also easier to prepare, can be stored for a longer time and can be transported in ampoules. G.I.P.

(996cd) Lukashenko examined a number of animals caught in a town in the southern Ukraine and found that 104 of 146 cats, 13 of 202 rats, 2 of 59 mice and one of four dogs were infected with *Trichinella*. The greatest intensity of infection was found in the inter-costal muscles. In cats it was 82·07% and in rats 85·7%. G.I.P.

(996ce) The action of phenothiazine on larval stages of *Haemonchus* was investigated by treating 30 experimentally infected lambs with phenothiazine in a 1:5 water suspension, intubated orally in doses of 0·5 gm. to 2 gm. per kg. body-weight after a 24-hour hunger diet. Doses of 0·6 gm. to 0·7 gm., and over, fully cleared *Haemonchus* infections and were also effective against other trichostrongylids. Control lambs, which had not received phenothiazine, passed eggs from the 20th day after infection. To act on the larval stages therefore, worming should be done 14 to 18 days after infection. G.I.P.

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cf. LYUBIMOV, M. P., 1953.—[*Pygarginema cervi* n.sp. from *Cervus* (*Sica*) *nippon hortulorum* Swin., 1864.] pp. 375–378. [In Russian.]

cg. MARKOV, G. S., 1953.—[Contribution to the problem of the effect of conditions on various stages in the development of parasites.] pp. 379–386. [In Russian.]

ch. MALIGIN, S. A., 1953.—[An experiment in the cure of strongyloidiasis in pigs.] pp. 387–391. [In Russian.]

ci. MATEVOSYAN, E. M., 1953.—[Reorganization of the classification of dilepid cestodes.] pp. 392–397. [In Russian.]

(996cf) *Pygarginema cervi* n.sp. is described and figured from *Cervus nippon hortulorum* on Putyatin Island, Russia. It has seven pairs of post-anal papillae and wide caudal alae, thus differing from *P. verrucosa* (Molin, 1860) found in *C. nambi* and *C. dichotomus* from Brazil, which has two pairs of post-anal papillae and narrow caudal alae. The new species is not differentiated from *P. skrjabini*, which is known from females only and was not specifically differentiated by Kadenatsii. The subfamily Ascaropinae is transferred from Thelaziidae to Spiruridae. G.I.P.

(996cg) Markov briefly discusses the relation of various factors with the development of parasites and defines stages and generations in the life of an animal as distinct terms, i.e. a generation is followed by the death of the given individual, a stage is not. He distinguishes two types of life paths of animals and represents them graphically. Spiral I is the path of equivalent (not identical) generations; the adult develops as result of a number of stages of one generation. This life path is named "monogenerational"; it is true for most animal species including those with asexual reproduction and is characteristic for acanthocephalans, most cestodes and nematodes. Examples are *Ascaris* and *Corynosoma*. Spiral II represents the development of an adult as a result of stages of two or more dissimilar generations. This life path is named "polygenerational" and is characteristic of digenetic trematodes, a few cestodes, e.g. *Echinococcus* and *Coenurus* and a few nematodes, e.g. Rhabdiasoidea. G.I.P.

(996ch) Maligin has found that eggs, larvae and adults of the free-living generation of *Strongyloides ransomi* are not resistant to various chemical solutions and are destroyed within 5 to 36 hours by low temperatures of 5–25°C.; drying killed the larvae and adults in 30 minutes and at 43–50°C. the eggs and adults died in four hours, the rhabditiform larvae in three hours and the infective larvae in six hours. *S. ransomi* is parasitic in the pig for three to nine months and on reinfection may continue for 18 months. Prophylactic measures, which completely removed the infection, were tested on two collective pig farms where 101 of 241 pigs examined were infected. From these experiments the following procedure is recommended. Infected pigs should receive supplementary food and should be placed in separate sties, which are cleaned out twice daily and the bedding changed once daily. The dung should be made into heaps not less than 1·5 m. in length and depth and covered by a layer of straw and soil. When pig and horse dung are mixed in parts of 4:1 for better self-heating all eggs and larvae die within 18 days. The sties should be washed once a month with a strong disinfectant. The sties should be kept dry and special attention given to those used for young and in-gilt sows. G.I.P.

(996ci) Matevosyan restricts the Dilepididae of Fuhrmann, 1907 to Dilepidinae Fuhrmann, 1907. The genera of the subfamily Dipylidiinae (Stiles, 1896) are placed into two new families, Dipylidiidae n.fam. and Choanotaeniidae n.fam. Dipylidiidae contains *Dipylidium*, *Diplopylidium*, *Joyeuxiella* and *Diskrjabiniella* n.g. which is made to contain *D. avicola* n.comb. and *D. columbae* n.comb., transferred from *Diplopylidium*. Choanotaeniidae is split into (i) *Southwellea* n.tribe to include *Southwellia*, *Aleurotaenia*, *Eugonodeum*, *Malika* and *Similuncinus*, and (ii) *Choanotaenea* n.tribe to include *Choanotaenia*, *Choanofuhrmannia*,

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cj. MACHULSKI, S. N., 1953.—[Helminths of Mustelidae of the Buryat Mongol ASSR.] pp. 398–405. [In Russian.]

ck. MIRETSKI, O. Y., 1953.—[Destruction of helminth ova by hot air.] pp. 406–412. [In Russian.]

cl. MITSKEVICH, V. Y., 1953.—[The use of phenothiazine in trichostrongyle disease in caribou.] pp. 413–416. [In Russian.]

cm. MOSINA, S. K., 1953.—[Study of the changes in the solar plexus caused by aneurysms in the antero-mesenteric artery of a horse.] pp. 417–421. [In Russian.]

*Onderstepoortia*, *Panuva*, *Pseudochoanotaenia*, *Dichoanotaenia* and *Rodentotaenia* n.g. *Choanotaenia* has been revised and is sudivided into *Choanotaenia* n.subg. with *C. infundibulum* as type and about 20 species, and *Cholodkovskya* n.subg. with *C. skrjabini* (Ivanitzky, 1940) as type and about 15 species. Seven species of *Choanotaenia* are transferred to other genera, viz., *C. filamentosum*, *C. crassiscolex* and *C. hepaticum* to *Rodentotaenia*, *C. tugarinovi* and *Choanotaenia* sp. Bauer, 1939 to *Anomotaenia*, *C. soricinum* to *Paricterotaenia*, and *C. meliphagidarum* to *Pseudochoanotaenia*. *Krimi* is transferred to Dilepididae. *Dictymetra radiaspinosa* nom.nov. is made for *D. numenii*, as this name is preoccupied by *Choanotaenia numenii* of Owen, 1946. G.I.P.

(996cj) Of 231 Mustelidae from the Buryat-Mongol ASSR autopsied, 138 were infected with helminths. The two cestode, twelve nematode and one acanthocephalan species found are listed with short notes on each. The species are also listed under their hosts. G.I.P.

(996ck) Two apparatuses are described which were tested for the destruction by hot air of helminth eggs present on objects of daily use. Irradiation of surfaces with the lamp-thermoradiator for 20 to 30 seconds was sufficient to kill the eggs. The temperatures reached were 49°C. at 5 cm. distance and 44°C. at 10 cm. after 10 seconds, and 149°C. and 119°C. respectively after 3 minutes. This lamp is more efficient, quicker and more easily moved than the quartz-mercury lamp. With the second apparatus, a vacuum cleaner to which a special nozzle was attached, the temperatures reached were 62°C. in 2 seconds, and 192°C. in 3 minutes at 5 cm. distance; at 10 cm. 52°C. were obtained in 5 seconds and 131°C. in 3 to 4 minutes. When the nozzle was placed close to objects, the temperature reached was 190°C., and *Ascaris* eggs were killed within 3 seconds; in one experiment all of 180 *Hymenolepis nana* eggs and in a second experiment 151 out of 164 eggs were killed within 2 seconds; 32 of 35 *Enterobius vermicularis* became deformed after one second. G.I.P.

(996cl) Trichostrongylid infections are wide-spread among caribou, which are infected almost from birth. The most pathogenic forms are Nematodirinae. Four young animals were given 0·5–1 gm. per kg. body-weight of phenothiazine as a single dose or over two days, and four animals were used as controls. The 1 gm. dose was the best, but was not fully efficient against trichostrongyles. 0·5 gm. per kg. body-weight given over two days (total dose of 20 gm.) lowered the infection by 50%, but had little effect on Nematodirinae. Phenothiazine in these doses caused keratitis and transient blindness and should not be used. G.I.P.

(996cm) *Delafondia vulgaris* larvae, which produce dilatations of the anterior mesenteric artery, also cause pathological changes in the solar plexus. These are a response of the nerves to inflammation of the nerve cells caused by aneurysms of the artery and depend on the extent of the aneurysm. They lead to enervation of almost the whole intestine causing weakened peristalsis, constipation, colic and fermentation of food material in the intestine. G.I.P.

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cn. MOZGOVOI, A. A., 1953.—[On the study of phylogenetic relationships and lines of evolution of the Ascaridata, viewed from the biology and phylogeny of the Ascaridae.] pp. 422–431. [In Russian.]

co. NAMASKULOVA, Z., 1953.—[Phenothiazine-salt mixture for the treatment of strongylosis in horses.] pp. 432–435. [In Russian.]

cp. NEVOSTRUEVA, L. S., 1953.—[The life-cycle of a new echinostomatid of domestic birds, *Echinoparyphium petrowi* n.sp.] pp. 436–439. [In Russian.]

cq. NIKULIN, T. G., 1953.—[An experiment in the cure of ascariasis in pigs on a collective farm.] pp. 440–444. [In Russian.]

(996cn) Mozgovi agrees with those authors who hold that the ancestors of the Ascaridata were free-living nematodes and, using Sobolev's phylogenetic tree, he considers that the most fundamental species were apparently those parasitic in lower aquatic vertebrates, that the first infection must have been through the mouth and that the development was direct. He suggests that the hosts became segregated into carnivorous definitive hosts and herbivorous intermediaries. Two types of worms then evolved, those parasitic in aquatic animals and with development in an intermediary, eventually giving rise to Anisakoidea, and those which adapated themselves to terrestial animals and, with direct development, gave rise to Ascaroidea. The latter then fell into two groups: the phylogenetically younger Ascaridiidae, parasitic in birds and without larval migration in the blood-stream and the Ascaridae, parasitic in mammals and frequently with a hepato-pulmonary migration. Those Anisakoidea which remained aquatic and retained the ventriculus gave rise to the more primitive Anisakidae and the Goeziidae, while from those which lost the ventriculus and became adapted to terrestial hosts arose the Angusticaecidae and Heterocheilidae. The phylogenetic relationships of genera of Anisakidae in relation to their gut structure is discussed. G.I.P.

(996co) Feeding of phenothiazine mixed with salt was used to treat strongylosis in 710 horses which had become semi-wild through year-round pasturing on a collective farm in Kazakhstan. One group received 20 gm. of phenothiazine per adult and 1 gm. per foal in a mixture of 1:4 parts of salt given over three to four days and then for 21 days smaller doses of 2 gm. per adult and 0·5 gm. per foal as a 1:15 salt mixture to act on the larval stages. A second group received the smaller doses only and a third group was used as control having received salt only. The efficacy was tested by the modified Stoll's method. The tabulated results show that in the first and second groups the number of eggs excreted was reduced by 82% and 83%, while in the control group it increased by 35% for the same period. The number of horses in very good condition rose from 36·7% to 75·9% in the first group, from 34·7% to 74% in the second group and from 24·5% to 57% in the controls during the summer period which was spent on high mountain pastures. G.I.P.

(996cp) Metacercariae of a new echinostomatid enclosed in cysts 0·21–0·245 mm. in diameter were present in 92 of 353 *Viviparus viviparus* in the Moscow region. Rediae and cercariae were found in 21 of the snails. Five to eight days after infected snails had been fed to chicks, ducklings and goslings mature *Echinoparyphium petrowi* n.sp. were obtained. The new species has 49 cephalic spines which distinguishes it from all other species of the genus in which the greatest number of spines is 45. Of the spines, 41 (0·0123–0·0164 mm. long) are arranged in a double row uninterrupted dorsally and four (0·0369–0·041 mm. long) are situated on each ventral lobe of the collar. G.I.P.

(996cq) As a result of the application, on a pig farm, of a combination of anthelmintic measures lasting three years, the average *Ascaris* infection of 29·5% was completely cleared, *Trichuris* infection was lowered from 35·2% to 1·25% and strongylid infection from 96·6% to 11·2%. The measures included worming the pigs over two months old in April and November, of spring-born pigs in May and July and of autumn-born pigs in November and January. Sodium fluoride (0·15–0·2 gm. per kg. body-weight) or sodium silicofluoride

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cr. NOSIK, A. F., 1953.—[Immunity in some helminth diseases.] pp. 445–451. [In Russian.]
cs. OZERSKAYA, V. N., 1953.—[Ditrazin tested against muelleriasis in sheep.] pp. 452–457. [In Russian.]
ct. OKOROKOV, V. I., 1953.—[Acanthocephala of wild and domestic birds in the Chelyabinsk region.] pp. 458–460. [In Russian.]
cu. PALIMPSESTOV, M. A., LITVISHKO, N. T. & KHARCHENKO, O. N., 1953.—[Experimental control of *Drepanidotaenia* disease of geese.] pp. 461–469. [In Russian.]

(0·06 gm. per kg.) was given twice daily for five days. The latter was better for mass treatment and was cheaper. Young pigs received a supplementary diet and pigs with signs of rickets received a high concentration of vitamin D. Sties were cleaned daily and disinfected with boiling lye. The dung, which was mixed with sawdust (2:1) and put into suitable heaps became heated to 53·8°C. in March, and all *Ascaris* eggs died. The dissemination of *Ascaris* eggs by *Musca domestica* and *Calliphora erythrocephala* was controlled by spraying the sty walls with insecticides. G.I.P.

(996cr) Nosik, in an experimental study of *Echinococcus* and *Cysticercus* infections of pigs, sheep, cattle and rabbits, found that immunity increased with the age of the animals. Thus in *E. veterinorum* cysts which developed in four-month-old pigs, brood capsules were still absent, in six-month-old pigs single brood capsules with viable scolices were present, while in pigs 20 to 24 months old only sterile cysts were found. Similarly, in sheep 3 to 3½ years old and cattle 2½ years old, if the infection did take, the cysts were mostly sterile. Reinfection was unsuccessful or limited to sterile cysts. The author found that the morphological modifications in the cyst which gave rise to the various specific types of Echinococcus cysts were determined by the host body and its reaction to the infection, and that these factors also determined increasing immunity. He concludes that in helminthiasis, nonspecific immunity is of decisive significance and the immuno-biological state of the body is dependent on its reactivity which stimulates processes of encapsulation, phagocytosis and lysis. Specific immunity is due to the production of antibodies against the products of the parasite. G.I.P.

(996cs) After testing over six anthelmintics against muelleriasis in sheep Ozerskaya found that Ditrazin (a compound analogous to hetrazan) was the most effective. Four of six sheep, which received 0·3–0·5 gm. per kg. body-weight of Ditrazin *per os*, ceased to pass *Muellerius capillaris* larvae. The intensity of infection was lowered by 83% to 96·3%. Nine out of 15 sheep treated subcutaneously with 0·1–0·2 gm. per kg. of Ditrazin in 20% and 40% solutions ceased to pass larvae. Intensity of infection was lowered by 90·4% to 96·3% in three sheep and by 61·9% to 62·2% in two. Five goats were also treated. In two cases the passage of larvae ceased and in the faeces of the others only single larvae were found afterwards. Ditrazin was effective against *Dictyocaulus filaria* present also in ten of the sheep and against *Protostrongylus* found in five of the sheep. G.I.P.

(996ct) *Polymorphus magnus* and *P. minutus* infections are wide-spread in eight species of ducks in the Chelyabinsk region. 27·2% of 114 birds were infected. In domestic and wild ducks the infection sometimes reached 2,000 worms per bird and produced considerable pathological changes in the intestine. The highest numbers occurred from August to October. Wild ducks aid the spread of these infections among the domesticated breeds. G.I.P.

(996cu) Turpentine oil mixed in equal parts with vegetable oil or fish fat was tested against *Drepanidotaenia* in geese; the extent of infection was decreased by 96%, the intensity by 92% to 97·3%. Dosages varied according to age from 0·5-2 ml. per kg. body-weight for goslings three to six weeks old to 8–9 ml. per kg. for adults (six to ten months old). The anthelmintic mixture is followed by a 20% solution of magnesium or sodium sulphate in doses varying from 8 ml. to 40 ml. according to age. The lethal dose of turpentine was 15 to 20 times higher than the therapeutic dose of 1·0–1·5 ml. per kg. body-weight. A convenient method of intubation is described. G.I.P.

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cv. PANASYUK, D. I., 1953.—[The effect of hexachlorethane on the organism of the horse.] pp. 470–482. [In Russian.]

cw. PANOVA, L. G., 1953.—[An experiment on the introduction of a complex method of control of fascioliasis in sheep into the practice of collective farms in the Tikhvin district of the Leningrad region.] pp. 483–487. [In Russian.]

cx. PARAMONOV, A. A., 1953.—[Revision of the superfamily Aphelenchoidea Fuchs, 1937 (Nematoda: Tylenchata).] pp. 488–496. [In Russian.]

cy. PARUKHIN, A. M. & KUPRIYANOVA, R. A., 1953.—[The occurrence of doubling of the anterior end of the body of the nematode *Camallanus lacustris* (Zoega, 1776).] pp. 497–498. [In Russian.]

cz. PETROV, A. M., 1953.—[Mass appearance and subsequent destruction of helminths in silver-black foxes in animal breeding farms in the U.S.S.R.] pp. 499–506. [In Russian.]

da. PETROCHENKO, V. I., 1953.—[Acanthocephala of amphibians in the U.S.S.R.] pp. 507–517. [In Russian.]

(996cv) From experiments on horses it is concluded that pure hexachlorethane, being insoluble in water, is only slightly soluble in the gastro-intestinal juices and that only small amounts are absorbed when given by mouth. A dose of 0·2 gm. per kg. body-weight did not affect the horse, 0·4 gm. per kg. disinfected the gastro-intestinal tract, produced increased tonicity of the vagus nerve for two to three days, stimulated the blood-forming organs and increased the percentage of chlorides in the blood, while 7–10 gm. per kg. produced reversible toxic effects. G.I.P.

(996cw) Experimental control measures were applied on a number of sheep farms with fascioliasis in the Leningrad region. The infection was sharply lowered or completely cleared by a change of pasture every 1½ to 2 months and by worming the sheep twice yearly two to three weeks before the sheep were taken on to pastures and just after they had returned to the stables. When a change of pasture only was applied, the infection in adult sheep remained level but when lambs were kept with infected sheep they did not become infected. G.I.P.

(996cx) Paramonov reviewing the Aphelenchoidea, has made a study of the aphelenchoid bursa and other characters and concludes that the Aphelenchinae includes two groups. Leaving in the Aphelenchinae the type genus *Aphelenchus*, he creates *Aphelenchoididae* n.fam. to include *Aphelenchoides* as type and *Bursaphelenchus*, *Laimaphelenchus*, *Parasitaphelenchus*, *Cryptaphelenchus* and *Ektaphelenchus*. A key to the families and subfamilies of the Aphelenchoidea and their diagnosis is given. G.I.P.

(996cy) A doubling of the head end is reported in a female *Camallanus lacustris* from *Perca fluviatilis*. One branch was fully formed and with a circum-oesophageal nerve ring, while the other had only one trident and lacked a nerve ring. G.I.P.

(996cz) Petrov discusses the change in the helminth fauna of silver-black foxes which consisted of nine species in 1928, soon after the foxes became established in Russia, and now includes twenty species; these are listed. He states that by application of complex therapeutic control measures it has been possible to clear all helminth infections in 30 out of 37 fox-breeding farms. G.I.P.

(996da) The 14 species of Acanthocephala recorded as adult forms in Amphibia all belong to *Acanthocephalus*. An additional species, *A. caucasicus* n.sp., is now described and figured from *Rana macrocnemis* and *Bufo viridis* in Central Caucasus. It is characterized by having 22 to 24 longitudinal rows of hooks on the proboscis. On the bases of the first two hooks of each row there are two processes. The nearest species is *A. bufonis*, with 18 to 20 rows of equal hooks, which is recorded for Russia for the first time. *A. ranae* and *A. bufonicola* also occur in Russia. A key to these four species is provided and their geographical distribution defined. G.I.P.

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db. PLOTNIKOV, N. N., 1953.—[An experimental method for the treatment of *Opisthorchis* disease.] pp. 518–522. [In Russian.]

dc. PODYAPOLSKAYA, V. P., 1953.—[Some questions on the epidemiology of ascariasis and its control.] pp. 523–531. [In Russian.]

dd. POLOZHENTSEV, P. A., 1953.—[A study of nematodes of the family Mermithidae Braun, 1883.] pp. 532–542. [In Russian.]

de. POMRYASKINSKAYA, N. A., 1953.—[On the helminth fauna of fowls in Mari ASSR.] pp. 543–544. [In Russian.]

df. POPOV, N. P., 1953.—[The discovery of *Tetrathyridium* infection in domestic birds.] pp. 545–546. [In Russian.]

dg. POPOVA, Z. G., 1953.—[Pathological and morphological changes in the proventriculus of ducks caused by natural *Tetrameres* infection.] pp. 547–551. [In Russian.]

dh. POPOVA, T. I., 1953.—[An investigation of the oecology of nematodes of the superfamily Strongyloidea Weinland, 1858.] pp. 552–557. [In Russian.]

(996db) Plotnikov has found that a fistula attached to the bile-duct and leading to the exterior proved a convenient method for the observation, under natural conditions, of the effect of treatment of *Opisthorchis* infections in dogs. Kovalev modified this method by sieving out the worms passing with the bile which could then be examined individually. By applying this modification in a number of experiments, he has shown that even small doses of hexachlorethane from 0·5 gm. per kg. body-weight are effective. 0·1 gm. per kg. removed 49% of the worms and 0·2–0·5 gm. per kg., spread over two days, 95%. The worms were eliminated within one day by the 0·5 gm. dose, within 15 days by 0·2 gm. and in one month by 0·1 gm. doses. When used in doses of 0·1–0·2 gm. per kg. against *Opisthorchis* in man, the only harmful effects observed were slight headaches and dizziness in a few cases. G.I.P.

(996dc) For two years Podyapolskaya studied human ascariasis in Azerbaijan with special reference to parasitization by young and mature worms. The highest incidence occurred in July. Young and mature worms were found simultaneously in one third of the cases between June and September. The effect of five anthelmintics on the two stages was compared; male fern extract acted twice as well on the immature as on the mature worms. G.I.P.

(996dd) Polozhentsev has amended Filipjev's key to the genera of Mermithidae and gives a list of the known genera and species with localities and hosts where applicable. *Amphimermis zuimushi* is transferred to *Mermis*. To the seven genera considered by Filipjev as doubtful, the author also adds *Amphimermis* Kaburaki & Iyatomi, 1933 and *Acarinocola* Natal, 1941. G.I.P.

(996de) Of 48 chickens from Mari ASSR, 45 were infected with helminths; nematodes were present in 93·6% and cestodes in 27%; larval *Agamospirura* sp. are described from six chickens and larval trematodes from two. Of the eight species found the most frequent were *Heterakis gallinae* (78%) and *Ascaridia galli* (31%). G.I.P.

(996df) *Tetrathyridium elongatum*, the larval form of *Mesocestoides lineatus*, was found in the body-cavity of chickens from Chuvash ASSR. This is the second time that this infection has been reported for Russia. G.I.P.

(996dg) Pathological and anatomical changes caused by *Tetrameres fissispina* infections in the proventriculus of ducks lead to catarrhal inflammation and enlargement. The mucous membrane is dotted with rounded structures resembling small haematoma which contain the young females. The mature females are found in the thicker glandular wall of the stomach and the males in the mucous membrane. G.I.P.

(996dh) The hosts of Strongyloidea fall into four groups: mammals which harbour 393 species, birds with 40 species, reptiles with 56 species and amphibians with 2 species. The occurrence of the various genera of parasites in each of these groups is discussed. G.I.P.

PAPERS ON HELMINTHOLOGY PRESENTED TO ACADEMICIAN K. I. SKRYABIN ON HIS 75th BIRTHDAY. Moscow: Izdatelstvo Akademii Nauk SSSR, 812 pp. (cont.)

di. POTEMKINA, V. A., 1953.—[Testing pumpkin seeds as an anthelmintic against intestinal cestodes and nematodes of cats and dogs.] pp. 558–563. [In Russian.]
dj. POTSELUEVA, V. A., 1953.—[The development of *Cysticercus pisiformis* in the body of rabbits.] pp. 564–566. [In Russian.]
dk. PUKHOV, V. I., ZINICHENKO, I. I. & CHERNOBAEV, N. I., 1953.—[Experimental immunization of lambs against *Coenurus*.] pp. 567–571. [In Russian.]
dl. PUKHOV, V. I., RESHETNYAK, V. Z. & KRIVOSHTA, E. E., 1953.—[Observations on the immunological diagnosis of *Dictyocaulus* disease in sheep.] pp. 572–574. [In Russian.]
dm. RAKOVA, V. M., 1953.—[Dynamics of infection of *Leuciscus* depending on age.] pp. 575–58. [In Russian.]

(996di) Pumpkin seeds were tested against helminth infections in 64 cats and 8 dogs. In cats which received 40 gm. of seeds over two days followed by a laxative the intensefficacy against *Hydatigera taeniaeformis* reached 100% and the extensefficacy 100%, against *Dipylidium caninum* it was 8·8% and 40% respectively, while against *Ancylostoma caninum* the intensefficacy was 3·1% but none of the cats were fully cured of the infection. Dogs were given 300–400 gm. of seeds followed by a laxative; against *Taenia hydatigena* the intensefficacy reached 96·6% and the extensefficacy 75%, against *A. caninum* it was 33·3% and 50% respectively and against *D. caninum* the intensefficacy was 11% but no dog was cured. G.I.P.

(996dj) Potselueva has studied experimentally in the rabbit the development of *Cysticercus pisiformis* at intervals from 3 hours to 90 days after infection and records the changes in the various organs, particularly in the liver, associated with the migration of the cysticerci. G.I.P.

(996dk) Lambs, seven to eight months old, were immunized experimentally with injections of a mixture of equal parts of extracts of Coenurus and *Multiceps multiceps* strobilae. The extracts were prepared from both fresh and formalin-preserved coenuri, and from *M. multiceps*, ground and dissolved in physiological solution in proportions of 1:5 and 1:10 respectively. The mixture was preserved with thymol (1:2,000) and kept at 8–10°C. for three months, then tested for its sterility before use. Two months after immunization the lambs were each infected with 70 oncospheres. No infection took place in those which had been given two subcutaneous injections of 10 ml. and 20 ml. or 6 ml. and 12 ml., or oral doses of 35 ml. and 60 ml. or 25 ml., 50 ml. and 50 ml. An oral dose of 10 ml., 20 ml. and 30 ml. was insufficient to produce immunity. One experimental lamb which was in a weak condition died after the first injection of 4 ml. Infection resulted in two control lambs three and eight months old but not in a 1½-year-old one. G.I.P.

(996dl) In five guinea-pigs experimentally immunized with antigenic extracts of *Dictyocaulus filaria* and in experimentally infected sheep, specific complement fixing antibodies were formed in the blood. In guinea-pigs they appeared ten to twelve days after immunization. The complement fixation reaction was positive in 12 of 17 experimentally infected sheep; this reaction remained positive for up to five months in four of seven sheep which had recovered from the infection, although tests for larvae were negative. No antibodies were found in sheep injected with the antigen intratracheally but they were formed in those injected subcutaneously. The precipitin reaction with this antigen has no significance in *Dictyocaulus* infections as it was not specific. Hyperimmune serum contains antihaemotoxic substances which counteract the pathogenicity of the parasite. G.I.P.

(996dm) Parasitic infections of 216 ide, one to seven years old, were studied with particular reference to some of the 13 helminth species found. Infections increased with the age of the fish up to a maximum and then began to fall. Generally, highest susceptibility was encountered in ides four to six years old, e.g. the maximum for *Diplozoon paradoxum* and *Diplostomum spathaceum* was in four-year-old fish, and for *Proteocephalus torulosus* in those five to six years old. A fall in infection was connected, in a number of cases, with a change in the type of food. G.I.P.

PAPERS ON HELMINTHOLOGY PRESENTED TO ACADEMICIAN K. I. SKRYABIN ON HIS 75th BIRTHDAY. Moscow: Izdatelstvo Akademii Nauk SSSR, 812 pp. (cont.)

dn. RADKEVICH, N. A. & MALISHEV, K. G., 1953.—[Experimental use of hexylresorcinol and a synthetic alkaloid as anthelmintics for foxes.] pp. 582–586. [In Russian.]
do. RONZHINA, G. I., 1953.—[The early diagnosis of coenuriasis in sheep.] pp. 587–597. [In Russian.]
dp. RUKHLYADEV, D. P. & RUKHLYADEVA, M. N., 1953.—[A study of the helminth fauna of the brown bear.] pp. 598–602. [In Russian.]
dq. RIZHIKOV, K. M. & SUDARIKOV, V. E., 1953.—[A new nematode from gobies in Lake *Porrocaecum* Baikal.] pp. 603–606. [In Russian.]
dr. RIZHKOVA, N. P., 1953.—[The blood picture of domestic ducks during treatment of disease. (Preliminary note.)] pp. 607–610. [In Russian.]
ds. SAVINOV, V. A., 1953.—[The development of *Alaria alata* (Goeze, 1782) in the bodies of the final and reservoir hosts.] pp. 611–616. [In Russian.]

(996dn) Hexylresorcinol in doses of 0·6 and 0·8 [gm.] given after a hunger diet lasting 16 to 18 hours showed good results against *Toxocara canis* in silver-black foxes and *Toxascaris leonina* in polar foxes. The synthetic alkaloid, carbocholin, was not very effective against *Diphyllobothrium* in either species. The mode of action of hexylresorcinol in various concentrations and its effect on the treated animals was also studied. G.I.P.

(996do) Coenurus infections in sheep can be diagnosed by ophthalmoscopy one to two months before the appearance of definite clinical symptoms. The first signs of stagnation in the fundus of the eye occur in the eye opposite to the side of the brain in which coenurus is present and are expressed in the merging of the optic disc with the retina, first on the nasal side and later (towards the appearance of the clinical symptoms) on the temporal side, when repletion of blood vessels and haemorrhages can also be observed. An increase in the albumin and cells in the spinal fluid and its pressure can also be used for an early diagnosis. These changes in the fundus of the eye almost always precede clinical symptoms in subacute and chronic infection and allow distinction to be made between coenuriasis and hydatid cyst, in which the fundus remains normal, and other eye diseases. G.I.P.

(996dp) Five *Ursus arctos caucasicus* from the Caucasus National Reserve were found on autopsy to be infected with *Toxascaris transfuga*, *Uncinaria stenocephala*, *Capillaria plica*, *Thominx aerophilus* and *Dicrocoelium dendriticum*. *C. plica* and *T. aerophilus* are new records for this host. G.I.P.

(996dq) *Capillaria baicalensis* n.sp. from *Batrachocottus baicalensis* is characterized by a smooth cuticle, by the length (0·462–0·504 mm.) of the spicule and the size of the eggs (0·047–0·057 mm. × 0·022–0·025 mm.) which have a crinkled outer membrane. The authors consider that the new species is endemic in Lake Baikal and is unlikely to be found elsewhere. G.I.P.

(996dr) *Porrocaecum* infections in ducks depressed the activity of the central nervous system and the blood-forming organs, while treatment with therapeutic doses of carbon tetrachloride and normal butylidene chloride caused their stimulation. 100% efficacy was obtained both in the intensity and extent of the infection when ten ducks were treated with 2 c.c. per kg. body-weight of carbon tetrachloride or 3 c.c. per kg. of normal butylidene chloride. G.I.P.

(996ds) The migration of *Alaria alata* larvae has been studied in detail. The larvae, having reached the digestive tract of the dog, actively migrate through the abdominal and thoracic cavities into the lung parenchyma where the first stage of development occurs. 12 to 19 days after infection they travel along the bronchi, trachea and pharynx to the duodenum, their final localization. Two types were recognized by Skryabin & Schulz in their classification of larval migrations. Savinov proposes to call this third and new type "trans-entero-pulmonteral migration". The author found that, besides the known reservoir hosts for *A. alata*, some birds and insectivores can also serve as reservoirs. G.I.P.

PAPERS ON HELMINTHOLOGY PRESENTED TO ACADEMICIAN K. I. SKRYABI ON HIS 75th BIRTHDAY. Moscow: Izdatelstvo Akademii Nauk SSSR, 812 p (cont.)

dt. SADKOVSKAYA, O. D., 1953.—[Change in the leucocyte blood formula of the comm gudgeon during *Ligula* infection.] pp. 617–619. [In Russian.]

du. SADIKHOV, I. A., 1953.—[A study of the helminth fauna of jackals in Azerbaijan.] pp. 62 621. [In Russian.]

dv. SAIDOV, Y. S., 1953.—[Revision of the family Rhabdochonidae Skryabin, 1946 and of t subfamily Cyclozoninae Sobolev, 1949.] pp. 622–635. [In Russian.]

dw. SAFRONOV, M. G., 1953.—[A study of the helminth fauna of horses in Yakutsk ASS pp. 636–641. [In Russian.]

dx. SVADZHYAN, P. K., 1953.—[Dynamics of an infection of terrestrial molluscs in Armeni SSR by parthenogenetic stages of *Dicrocoelium lanceatum* and factors influencing the expulsio of slime balls.] pp. 642–648. [In Russian.]

(996dt) In *Gobio gobio*, from the Stavropol' region, with *Ligula* sp. infections the averag monocyte and polymorphonuclear leucocyte counts on twenty-five specimens were 16·5% and 17·5% while in 26 uninfected fish the averages were 10·4% and 4%. There was no part cular correlation between the leucocyte formula and the age of the fish. G.I.

(996du) *Mesocestoides lineatus*, *Echinococcus granulosus*, and *Uncinaria stenocephal Toxocara canis*, *Ancylostoma caninum*, *Toxascaris leonina*, *Thominx aerophilus* and *Dioctophym renale* were found in 14 jackals from Azerbaijan. The occurrence of *E. granulosus* in th jackal implicates this animal as a source of hydatid infection in farm stock and possibly i man. The *U. stenocephala* found differed from those described by Petrov in 1941 from fox and dogs, in that the dorsal ray first bifurcates, then each symmetrical branch divides inn three similar branches. G.I.

(996dv) Saidov, reviewing the Rhabdochonidae, considers that the presence of pola filaments on their eggs is not a sufficient distinction between two subfamilies and mak Cystidicolinae a synonym of Rhabdochoninae. He disagrees with Sobolev who place *Echinonema* in Spinitectinae and believes that it should be placed in a separate family; howeve lacking his own material he removes the genus out of the Rhabdochonidae but refrains fro giving it a definite place in the nematode classification. Cyclozoninae are taken out of Acuarioide and put into Rhabdochonidae. A key to the three subfamilies at present in the Rhabdochonida the Rhabdochoninae, Spinitectinae and Cyclozoninae, is given. To the description of *Cyclozo acipenserina* Saidov adds that there are four head papillae and nine (not eight) genital papilla *Rhabdochona* is split into two subgenera: *Rhabdochona* n.subg., in which the eggs lack pol filaments, contains the type *R. denudata* and 30 of the species; *Filochona* n.subg., in whic the eggs have polar filaments, has as type *R. sulaki* n.sp. This new species is described fro *Barbus brachicephalus caspicus* in Daghestan ASSR and differs from *R. ovifilamenta* an *R. ovifilamentosa*, the other two species in *Filochona*, by the structure and size of the eg filaments which are 0·38–0·42 mm. long. Saidov finds that what Weller described as a accessory piece in *R. ovifilamenta* is the small spicule and his small spicule is, in fact, th dorsal ridge of this spicule. *R. denudata filamentosa* is raised to specific rank and placed *Filochona*. G.I.

(996dw) Thirty-one helminth species are listed from horses in Yakutsk. *Caballonem longicapsulatum*, previously known from one male only, is now fully described. G.I.

(996dx) Svadzhyan has studied *Dicrocoelium dendriticum* infections of molluscs in variou geographical zones of Armenia, the periods of infection of pastures with cysts and the facto influencing the expulsion of encysted cercariae from the molluscs; he concludes that th infection of molluscs on pastures increased without interruption from spring to autum that the molluscs were most highly infected in the mountain-steppe zone, that in semi-dese and in mountain-steppe zones pastures were infected with slime balls in spring and autum while in the subalpine zone pastures were continuously infected from June to October an

PAPERS ON HELMINTHOLOGY PRESENTED TO ACADEMICIAN K. I. SKRYABIN ON HIS 75th BIRTHDAY. Moscow: Izdatelstvo Akademii Nauk SSSR, 812 pp. (cont.)

dy. SEMENOV, V. D., 1953.—[The influence of helminths on the activity of some blood enzymes and the dependence of this influence on the functional state of the central nervous system of the animal.] pp. 649–654. [In Russian.]

dz. SEMENOVA, N. E., 1953.—[Clinical study of early stages of ascariasis.] pp. 655–657. [In Russian.]

ea. SKALINSKI, E. I., 1953.—[Observations on the pathological anatomy of spontaneous strongyloidiasis in pigs.] pp. 658–668. [In Russian.]

eb. SKARBILOVICH, T. S., 1953.—[Changes in the conditions of the external environment as a means of control of the beet nematode.] pp. 669–675. [In Russian.]

ec. SOBOLEV, A. A., 1953.—[To define more accurately the information on Rhabditata (superfamilies Rhabditoidea and Aphelenchoidea), parasitic in insects.] pp. 676–684. [In Russian.]

hat the expulsion of encysted cercariae depended on the activity of the molluscs which in ts turn was conditioned by a high relative humidity (67–100%) and by temperature (3·5–8°C.); expulsion was also promoted by sunshine or artificial light lasting 8 to 15 days. In natural conditions the cercariae left the host on wet days following a long sunny period. A nethod of obtaining *D. dendriticum* cysts from molluscs in the laboratory is described. G.I.P.

(996dy) In white rats injected subcutaneously with body-fluid or aqueous and alcoholic extracts of Ascaris, the activity of catalases and particularly peroxidases of the blood was owered. During the migration of Ascaris larvae the level of activity of peroxidase increased. In rats under urethane anaesthesia, the subcutaneous injections or the larval migrations had ittle or no influence on the activity of the blood peroxidases. The influence of helminth oxins on the blood enzymes was also decreased by a low protein diet. G.I.P.

(996dz) In three cases of ascariasis the beginning of infection was marked by high emperature (38°C.) followed by the development of cutaneous symptoms in two cases and in eosinophilic infiltrate in the lung of the third. Two-and-a-half months after the onset, ntestinal ascariasis could be observed in all three cases. Treatment with heptylresorcinol gave complete cures but allergic symptoms persisted for a time. G.I.P.

(996ea) The pathological changes in the gastro-intestinal tract of pigs caused by strongyoidiasis have been studied on 17 pigs and the observations are described in great detail. G.I.P.

(996eb) Liming the soil to create unfavourable conditions for the beet nematode was ested in laboratory and field experiments. Samples of 50 cysts were placed in calcium hypohlorite solutions. A solution of 0·25% for 40 hours, of 0·5% for 12 hours and 1% for two ours stimulated the larvae to leave the eggs and they remained in the cysts and died. In the ield calcium hypochlorite and slaked lime were used at rates of 50, 100 and 150 gm. per q. m. The results of soil tests for cysts made two weeks, one month and one year after treatnent, are tabulated. From these it is recommended that infected patches of soil should be reated with 100 gm. of calcium hypochlorite per sq. m. during August and September. G.I.P.

(996ec) In his review Sobolev uses the system of Skryabin, Shikhobalova & Sobolev 1949) for classifying the Rhabditata, but acknowledges only three superfamilies in the subrder, Aphelenchoidea being independent. Sobolev agrees with the Chitwoods (1950) who aised *Parasitorhabditis* to generic status. Carefully reconsidering Fuchs' data on his species, he author suggests that from Fuchs' first biological group the form *piniperdae* should be etained and raised to specific rank; from his second group, the fully described forms should e made into species retaining Fuchs' name and have as type species *P. obtusa ateri*, while ach insufficiently described form should be designated as *Parasitorhabditis* sp. and these ncorporated as synonyms of the names given by Fuchs. As Steinernematidae contains only ne type genus *Neoaplectana*, Sobolev renames it Neoaplectanidae nom.nov. and the subfamily

PAPERS ON HELMINTHOLOGY PRESENTED TO ACADEMICIAN K. I. SKRYAB ON HIS 75th BIRTHDAY. Moscow: Izdatelstvo Akademii Nauk SSSR, 812 p (cont.)

ed. SPASSKAYA, L. P., 1953.—[A new trematode of the family Schistosomatidae from the ve of *Rallus aquaticus*.] pp. 685–687. [In Russian.]

ee. SPASSKI, A. A., 1953.—[On the degree of independence of the helminth fauna of Ondatr pp. 688–693. [In Russian.]

ef. TIUNOV, V. I., 1953.—[Pathological, anatomical and histological changes in the large intest of a horse caused by nodular trichonemiasis ] pp. 694–709. [In Russian.]

eg. ULYANOV, S. D., 1953.—[Seasonal dynamics of haemonchiasis in sheep in the Alma-A region.] pp. 710–715. [In Russian.]

eh. USTINOV, A. A., 1953.—[Geographical variation in *Heterodera marioni*. (Contribution to study of geographical forms of plant nematodes.)] pp. 716–722. [In Russian.]

ei. FEDYUSHIN, A. V., 1953.—[A study of *Raillietina* (*Paroniella*) *urogalli*, a parasite Tetraonidae.] pp. 723–732. [In Russian.]

becomes Neoaplectaninae nom.nov. He agrees with Goodey (1951) who retains in Cephal bidae the two subfamilies Chambersiellinae and Turbatricinae abolished by the Chitwoo in 1950. Sobolev disagrees with Goodey (1951) who, in his revision of Aphelenchoid abolished a series of genera and proposes to retain Fuchs' genera *Bursaphelenchus*, *Cryp aphelenchus*, *Ektaphelenchus*, *Laimaphelenchus*, *Steineria* and *Parasitaphelenchus* until th have been further studied. He agrees with Filipjev (1934) that *Schistonchus* is an independe genus. G.I

(996ed) *Pseudobilharziella tatianae* n.sp. is described and figured from *Rallus aquatic* from Lake Chany. The characters differentiating it from the other eight species of this gen are: the length of the body (18–20 mm.), the number of testes (220–230), the gynaecopho canal continuing to the posterior end of the body, the union of the gut caeca in the male bel the genital pore, and the position of the female genitalia (except the vitelline glands) betwe the caeca. G.I

(996ee) Spasski shows that *Hymenolepis ondatrae* Rider & Macy, 1947 is a synonym *Sphenacanthus cyrtoides* Mayhew, 1925 and therefore that none of the five helminth spec described by Rider & Macy in 1947 from *Ondatra* in Oregon, are obligatory parasites of th host. He concludes that *Ondatra*, in its native country as well as in Russia, is mainly parasitiz by species originating from other vertebrates. G.I

(996ef) From a careful study of the symptoms produced in the intestine of 75 hor and four experimental foals with nodular trichonemiasis, the author describes in detail a and with illustrations the pathological changes caused by this infection. G.I

(996eg) The seasonal fluctuation of *Haemonchus* infections of sheep under local conditio of the mountainous Ala-Tau region was studied and the results are given for the various a groups of sheep. G.I

(996eh) Ustinov found that *Heterodera marioni* from tomato roots can occur in t geographical forms. All the stages of development of southern populations from Ba Sukhumi and Ashkahabad were larger than the more northern Khar'kov populations. I showed that the two populations varied also in reaction to temperature, but were not mer adaptations to local soil and climatic conditions. Populations of *H. marioni* grown on oth vegetable hosts in the same locality varied little in size. G.I

(996ei) In view of the many discrepancies in the structure of *Raillietina urogalli* given by various authors, Fedyushin gives a full description of this species from its tetrao hosts and discusses its distribution. From a comparative table of data for *R. urogalli* and *Davainea urogalli*, as quoted by Skryabin in 1914 after Krabbe (1882), he concludes that Fedchenko's collection, which was used by Krabbe for his work on *D. urogalli*, some oth unnamed cestode must be present. G.I

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ej. KHARICHKOVA, M. V., 1953.—[A study of the environmental development of the nematodes *Oesophagostomum venulosum* and *O. radiatum*.] pp. 733–736. [In Russian.]

ek. CHERTKOVA, A. N., 1953.—[A new nematode, *Tetrameres* (*Petrowimeres*) *pavonis* n.subg., n.sp., from the peacock.] pp. 737–739. [In Russian.]

el. SHALDIBINA, E. S., 1953.—[Infection of various species of Oribatidae and their role in the epizootiology of monieziasis on pastures in the Gorkovskoye region.] pp. 740–746. [In Russian.]

em. SHALDIBIN, L. S., 1953.—[New trematodes from insectivores.] pp. 747–755. [In Russian.]

en. SHARAFUTDINOVA, P. S., 1953.—[Helminths of the stomach and intestinal tract of dogs in Tashkent.] pp. 756–757. [In Russian.]

eo. SHIGIN, A. A., 1953.—[A new nematode from birds, *Tetrameres ardeae* n.sp.] pp. 758–760. [In Russian.]

(996ej) The three larval stages of *Oesophagostomum radiatum* and *O. venulosum* are described with illustrations. In both species the optimum temperature for the development of larvae in the eggs is 25–27°C.; at this temperature larvae of *O. radiatum* hatch after 10 to 12 hours and those of *O. venulosum* after 16 to 17 hours. The infective larvae of the two species can be distinguished by the presence of 32 triangular intestinal cells in *O. venulosum* and 21 elongated cells with well defined nuclei in *O. radiatum*. G.I.P.

(996ek) *Tetrameres* (*Petrowimeres*) *pavonis* n.subg., n.sp. is described and figured from one male found in *Pavo cristatus* from the Moscow Zoo. *Petrowimeres*, made to include the new species and the type *T. fissispina*, is characterized by a pair of cuticular processes on the head and cuticular spines on the body. In the new species the cuticular processes reach 0·105 mm. in length, the spicules are 0·43 mm. and 0·105 mm. long, the large spicule is S-shaped, and cephalic papillae are present; in *T. fissispina* the processes reach 0·069 mm. in length, the spicules are 0·36–0·49 mm. and 0·165–0·198 mm. long, the large spicule is straight and the cephalic papillae are absent. G.I.P.

(996el) After preliminary experimental infections of oribatid mites with *Moniezia expansa*, 3,225 naturally infected mites from 46 species were dissected and the 17 species in which mature cysticercoids were found are listed as intermediate hosts for *M. expansa*. 14 of these are new hosts for *M. expansa* and of these *Platynothrus peltifer*, *Eremaeus hepaticus* and *Ceratoppia bipilis* have never been registered as intermediaries before. The specific composition of mite intermediaries of *M. expansa* on different types of pastures in Gorkovskoye is discussed. G.I.P.

(996em) Shaldibin disagrees with the classification of the genera and subgenera of Opisthioglyphinae proposed by Dollfus in 1949 [*Ann. Parasit. hum. comp.*, **24**, 436–442] and in his turn divides *Opisthioglyphe* into two subgenera: *Opisthioglyphe* n.subg., with the type *O. ranae*, and *Neoglyphe* n.subg. to include the type *O. locellus* and two new species found in the European part of Russia, *O. oschmarini* n.sp. from *Neomys fodiens* and *O. sobolevi* n.sp. from *Sorex araneus* and *S. minutus*. Another two new species which were found in European Russia and are described and figured from *N. fodiens*, *S. araneus* and *S. minutus* are *Brachylaemus oesophagei* n.sp. and *Leucochloridium skrjabini* n.sp. The diagnosis of Leucochloridiinae is amended. G.I.P.

(996en) *Tetrameres ardeae* n.sp., described and figured from *Ardea cinerea*, is placed in the subgenus *Gynaecophila*; it differs from the other two species in this subgenus in that the males and the females are localized separately, while in *T. gynaecophila* and *T. sobolevi* the males are found in the same cyst as the females. G.I.P.

PAPERS ON HELMINTHOLOGY PRESENTED TO ACADEMICIAN K. I. SKRYABIN ON HIS 75th BIRTHDAY. Moscow: Izdatelstvo Akademii Nauk SSSR, 812 pp. (cont.)

ep. SHIKHOBALOVA, N. P., 1953.—[Experimental tests on immunity in trichinelliasis. III. Immunity acquired as a result of injections.] pp. 761–769. [In Russian.]

eq. SHLEIKHER, E. I. & SAMSONOVA, A. V., 1953.—[The helminth fauna of *Rhombomys opimus* in Uzbekistan.] pp. 770–773. [In Russian.]

er. SHPOLYANSKAYA, A. Y., 1953.—[Peculiarities in the localization of some species of the genus *Dactylogyrus* on the gills of *Carassius*.] pp. 774–777. [In Russian.]

es. SHULMAN, S. S., 1953.—[New species of monogenetic trematodes on Cyprinidae.] pp. 778–780. [In Russian.]

et. SHULMAN-ALBOVA, R. E., 1953.—[A new species of *Capillaria* from the intestine of *Coregonus lavaretus* in the White Sea.] pp. 781–782. [In Russian.]

(996ep) White mice were abdominally injected with 0·2 ml. of liquid trichinella antigen or 0·3 mg. (in 2 ml. of physiological solution) of the powdered antigen three times at five or ten-day intervals. The two antigens used were aqueous extract from fresh, ground larvae or the acid-soluble protein fraction in liquid or powder form. The mice were infected with 250 larvae ten days after the injections and autopsied 45 days later. It was found that the development of immunity can be recognized by the reduced number of adult worms, their smaller size or the reduced number of larvae in the muscles, the latter being the most reliable. From the tabulated results it appears that the liquid acid-soluble protein fraction injected at ten-day intervals and again after one month was the most effective, but the immunities formed in response to injections were much lower than those produced by infections. G.I.P.

(996eq) Six species of nematodes and two of cestodes were found in *Rhombomys opimus* in Uzbekistan. Of 454 animals from the Bukhara district 18·41% were infected and the commonest species was *Dentostomella translucida* (in 9·7%); of 51 animals from the Tashkent and Samarkand districts 90·2% were infected and the most frequent was *Trichuris rhombomidis* (in 78·4%). G.I.P.

(996er) The localization of the four species of *Dactylogyrus* found on the gills of *Carassius carassius* and *C. auratus gibelio* from reservoirs in European Russia, was examined and was characteristic for each of the species. *D. vastator* is found at the distal end of the gill, *D. crassus* at the proximal, *D. anchoratus* centrally and *D. laymani* half way between *D. vastator* and *D. anchoratus*. This differentiation of *D. crassus* and *D. vastator* is particularly interesting, as the first is found on *Carassius* only while the latter can transfer to carp. A detailed description of *D. laymani* is given. G.I.P.

(996es) *Gyrodactylus gobii* n.sp. from *Gobio gobio* and *Gyrodactylus vimbi* n.sp. from *Vimba vimba* from rivers in the Baltic region are described and figured. In the structure of the opisthaptor they are near to *G. nemachili* but each differs in the shape and size of the central hooks, which are 0·0457–0·0606 mm. long in *G. gobii* and 0·064–0·0658 mm. in *G. vimbi*. G.I.P.

(996et) *Capillaria coregoni* n.sp. is described and figured from *Coregonus lavaretus pidschian* in the White Sea. It most strongly resembles *C. tuberculata* and *C. lewaschoffi*, but differs from these by its smaller eggs (0·05–0·059 × 0·022–0·025 mm.) and the presence of a characteristic thread coiled around the spicule which is 0·45 mm. long; in *C. tuberculata* the spicule is 0·65 mm. and in *C. lewaschoffi* 0·33 mm. long; the new species is also distinguished from *C. lewaschoffi* by the presence of lateral processes on the posterior end of the male. G.I.P.

PAPERS ON HELMINTHOLOGY PRESENTED TO ACADEMICIAN K. I. SKRYABIN ON HIS 75th BIRTHDAY. Moscow: Izdatelstvo Akademii Nauk SSSR, 812 pp (cont.)

eu. SHULTS, R. S. & ANDREEVA, N. K., 1953.—[A study of the supporting apparatus and genital cone in the Trichostrongylidae.] pp. 783–792. [In Russian.]

ev. SHUMILINA, Z. V., 1953.—[A study of *Dictyocaulus* disease in camels.] pp. 793–800. [In Russian.]

ew. SHCHERBOVICH, I. A., AKRAMOVSKI, M. N. & DEMYANCHENKO, G. F., 1953.—[A test of the anthelmintic properties of sodium silico-fluoride against Parascaris in horses.] pp. 801–803. [In Russian.]

ex. YARULIN, G. R., 1953.—[The development of eggs of geohelminths in the sea and on the sea-shore.] pp. 804–807. [In Russian.]

(996eu) Nine trichostrongylids were studied for the presence or absence of the supporting apparatus; for four species of *Ostertagia* it is described in detail in this paper, and for the other forms it will be described later. The accessary apparatus in trichostrongylids can be subdivided into the same basic elements as those named by the authors in 1951 [for abstract see *Helm. Abs.*, **20**, No. 942y] for protostrongylids. The telamon was characteristic for each of the species and should be used as an additional criterion for the differentiation of species, but neither its presence nor its structure has higher taxonomic significance. A descriptive definition of the strongylate genital cone is given. G.I.P.

(996ev) Thirty-four camels in West Kazakhstan were dissected for *Dictyocaulus*, and *D. cameli* and a few *D. filaria* were found. A short description of *D. cameli*, its morphology, development in and outside the host and the seasonal variation in infection, are given. To study the validity of *D. viviparus* and *D. cameli*, a calf was infected with 2,700 *D. cameli* larvae. The infection did take, but the worms did not develop fully, sexual activity was lowered, larvae were excreted for forty days only and no worms were found on subsequent autopsy. G.I.P.

(996ew) Sodium silicofluoride containing about 78% of fluorine and given with bread mash or a small amount of moist oats, was tested on horses with *Parascaris* infections. Doses of 0·03 gm. per kg. body-weight were fully effective in 9 to 18-month-old horses, but 37% of the three to ten-year-old horses retained a slight infection. Doses of 0·04–0·08 gm. per kg. ensured full cure without toxic effects. Thus sodium silicofluoride is very efficient, simple in application and does not require special feeding or the use of a laxative. G.I.P.

(996ex) It was shown in laboratory experiments that geohelminth eggs developed normally in sea-water at their optimal temperature, but when the eggs were suspended in special flasks one metre deep in the Caspian Sea their development was delayed. Thus 56·6% of *Ascaris* eggs placed in sheltered waters and 13·3% of the eggs in the open sea had reached the larval stage after 30 days. On the shore, all *Enterobius* eggs had degenerated within five hours. In shaded but dry places, 6% to 8% of *Ascaris* and *Trichuris* eggs on the soil surface, 16% to 22% at 5 cm. and 54% to 70% at 10 cm. depth developed within one month. The temperatures were 27°C., 25°C. and 23°C. respectively and the humidity was 4% on the surface and 5·35% to 7% in the soil. The most favourable conditions were found in damp sections of the coastal soil, where at 15 cm. depth, 68% of *Ascaris* and 54% of *Trichuris* eggs developed in one month at 26°C. and saturated humidity. It is concluded that such sections of a contaminated shore are a source of infection to bathers. G.I.P.

997—*PIRAJÁ DA SILVA, M. A., 1953.—"Estudos sôbre o *Schistosomum mansoni* (1908–1916)." São Paulo: E. de Cerqueira & M. de Sousa Varela, 123 pp.

998—*POTEMKINA, V. A., 1953.—[Principal helminth diseases of domestic fowl.] Moscow: Gosudarstvennoe Izdatelstvo Selskokhozyaistvennoi Literaturi, 167 pp. [In Russian.]

999—*QUOADT, H., 1953.—"Verbreitung parasitärer Tierkrankheiten im Kreise Düren." Dissertation, Giessen, 27 pp.

1000—*RÜCKERT, G., 1953.—"Die parasitären Erkrankungen der Haustiere im Kreis Mainz." Dissertation, Giessen, 25 pp.

1001—*SCHMITZ, E., 1953.—"Verbreitung parasitärer Tierkrankheiten im Stadt- und Landkreis Bonn." Dissertation, Giessen, 31 pp.

1002—*SCHMUL, H. K., 1953.—"Die Verbreitung parasitärer Tierkrankheiten im Landkreis Waldeck." Dissertation, Giessen, 40 pp.

1003—SHULMAN, S. S. & SHULMAN-ALBOVA, R. E., 1953.—[Parasites of fish of the White Sea.] Moscow & Leningrad: Izdatelstvo Akademii Nauk SSSR, 199 pp. [In Russian.]

The parasites found in thirty species and one subspecies of fish from the White Sea are listed and include 40 trematodes, 12 cestodes, 9 nematodes, 6 acanthocephalans and one leech, *Ottonia brunnea*. Short notes, mainly on their occurrence in Russia, are given for all the species; the helminths are illustrated with eleven original drawings. The authors then discuss the parasite fauna of each fish species (with tables of incidence for most of the hosts), the oecological and zoogeographical characterization of the parasites, the dependence of the parasite fauna on the food and mode of life of the fish and the characters of the parasites from fish from various regions of the White Sea. G.I.P.

1004—SKRYABIN, K. I., 1953.—[Trematodes of animals and man. Principles of trematodology. Volume VIII.] Moscow: Izdatelstvo Akademii Nauk SSSR, 618 pp. [In Russian.]

The eighth volume of Trematodes of Animals and Man, edited by Skryabin, is divided into two main sections, viz., (i) Notocotylata by Skryabin and (ii) Gorgoderidae by Pigulevski. Notocotylata now contains four families, viz., Notocotylidae Lühe, 1909; Rhabdiopoeidae Poche, 1925; Opisthotrematidae Poche, 1925; and Nudacotylidae Skrjabin, 1953 [=Nudocotylinae Barker raised to family rank]. The only new form recorded in this section is *Tristriata anatis* n.g., n.sp. from *Clangula clangula* and *C. histrionica*. The name and description are supplied by Belopolskaya. It belongs to the Notocotylinae; the body has three ridges on the ventral surface, there are no ventral glands and the vitellaria do not extend beyond the level of the posterior edge of the testes. In section II, Gorgoderidae is subdivided by Pigulevski into two new subfamilies Phyllodistomatinae and Plesiochorinae. The genera *Phyllodistomum*, *Catoptroides*, *Microlecithus* and *Vitellarinus* are reduced in rank to subgenera of *Phyllodistomum*. *P.* (*P.*) *bychowskii* nom.nov. is made for *Distoma folium* Rudolphi, 1819, nec Olfers, 1816, *P.* (*P.*) *dogieli* nom.nov. for *P. folium* Ssinitzin, 1905 nec *P. folium* (Olfers, 1816), and *P.* (*P.*) *wiskowskyi* is a nom.nov. for *Phyllodistomum* sp. Wu, 1937. *P.* (*Catoptroides*) *massino* n.sp. occurs in *Abramis brama*, *P.* (*C.*) *petruschewskii* n.sp. in *Silurus glanis*, *P.* (*C.*) *zachwatkini* n.sp. in *Aspius aspius*, *P.* (*C.*) *stromi* n.sp. in *Mogurnda obscura*, *P.* (*Microlecithus*) *baueri* n.sp. in *Rutilus rutilus*, *P.* (*Vitellarinus*) *markevitschi* n.sp. in *Rhodeus sericeus*. *P.* (*V.*) *skrjabini* is a nom.nov. for *Phyllodistomum* sp. Wu, 1937. Pigulevski divides *Gorgoderina* into two subgenera, viz., *Gorgoderina* (Looss, 1902) Pigulevsky, 1952 [1953] and *Gorgorimma* Pigulevsky, 1952 [1953]. *Gorgoderina attenuata* Sokoloff & Caballero 1933 (nec Stafford, 1902) is renamed *G.* (*G.*) *skarbilovitschi* nom.nov. and *G.* (*G.*) *skrjabini* n.sp. is recorded from *Rana temporaria*. *Plesiochorus cymbiformis* Looss, 1902 (nec Rudolphi, 1819) is now a subspecies named *P. cymbiformis elongatus*. R.T.L. G.I.P.

1005—SPEARS, J. F. & SAWYER, M. J., 1953.—"The golden nematode. Control by soil fumigation." Washington, D.C.: Department of Agriculture. Bureau of Entomology & Plant Quarantine, No. EC-28, 10 pp.

1006—*TAKHISTOV, B. A., 1953.—[Worm diseases of farm animals.] Moscow: Gosudarstvennoe Izdatelstvo Selskokhozyaistvennoi Literaturi, 65 pp. [In Russian.]

1007—THOMSEN, E., 1953.—" Beitrag zur Behandlung der Lungenwurmerkrankung des Rindes unter Verwendung von Äther-Toluol, Merckojod und Kalium picronitricum." Dissertation, Hanover, 74 pp.

Thomsen treated 77 head of cattle for lungworm disease as follows: 16 were given a 1:1 mixture of ether and toluol (the dose varied from 10 c.c. to 25 c.c.); 31 received 2% Merckojod, a proprietary colloidal iodine suspension, at a dosage of from 30 c.c. to 60 c.c.; and 30 received 0·2% potassium trinitrophenate (dosage 20 c.c. to 50 c.c.). All were injected intratracheally. Merckojod and potassium trinitrophenate produced no significant side effects but the ether-toluol mixture led to quite serious symptoms: two of the animals collapsed completely for some minutes. Some of the cattle were treated at pasture, mostly without success. Thomsen does not think that his results with stalled animals are of much value since in most cases infections were very light: he also had no controls and spontaneous recovery cannot be ruled out. He emphasizes that anthelmintic treatment is of only secondary importance in lungworm disease. Stall hygiene and adequate feeding are much more important. A.E.F.

1008—*TURNER, H. F., 1953.—" The incidence of trichinosis in garbage-fed hogs raised in Alabama as determined by the examination of 791 diaphragms." Thesis, University of Alabama, 56 pp.

1009—*VSEVOLODOV, B. P., 1953.—[The pathological morphology of the more important helminthiases of domestic, agricultural and industrial animals.] Alma-Ata: Izdatelstvo Akademii Nauk Kazakhskoi SSR, 108 pp. [In Russian.]

1010—VUYLSTEKE, C., 1953.—" Nematodes parasites d'oiseaux." Exploration du Parc National de l'Upemba. Mission G. F. de Witte (1946–49). Brussels, Fasc. 17 (1), 1–41.

Vuylsteke records 35 species of nematodes from birds in the Upemba National Park and of these thirteen are new species and ten are new varieties. *Trachypharynx upembae* n.sp. from *Cercomela familiaris modesta* resembles the type species of the genus very closely but possesses a row of tiny spines arranged like the teeth of a saw at the posterior end, the spicules are filiform and 1·5 mm. long and the host is different; the caudal bursa is described (that of the type species has not been). *Allodapa leprincei* var. *upembae* n.var. from *Caprimulgus fossii welwitschii* is differentiated from *A. leprincei* by the possession of rounded oesophageal teeth and by the different number and arrangement of the caudal papillae in the male. *Contracaecum ruficolle* n.sp. from *Poliocephalus ruficollis capensis* is distinguished by the possession of a very short intermediate lip and relatively short, equal spicules 1·9 mm. long. *Echinuria gilsoni* n.sp. from *Philomachus pugnax* is distinguished from all other species of the genus by the length of the cuticular cordons, the very short pharynx and the shape of the spicules which are unequal and long (260 $\mu$ and 56 $\mu$) the larger being thin and regular in diameter and the smaller squat and broad. The cuticular expansion described in *E. leptotili* was not observed in this species. *Habronema seurati* var. *skrjabini* n.var. from *Falco s. subbuteo* has lips of a different structure from those in *H. seurati* and the formula of the post-anal papillae is equally different. *Oxyspirura brevisubulata* var. *ibisi* n.var. from *Bubulcus ibis* resembles *O. kartingensis* and *O. buccosulcata* except that the cephalic papillae are lacking; it is therefore assigned to *O. brevisubulata* but made a new variety because the description of the buccal cavity of the original species is not sufficiently detailed. *O. dendropicosi* n.sp. from *Dendropicos fuscescens camacupae* is differentiated by the stumpy shape of the male tail. *Physaloptera truncata* var. *africana* n.var. from *Circaëtus pectoralis* is distinguished from *P. truncata* by its much smaller size. *P. truncata* var. *cursorii* n.var. from *Cursorius t. temminckii* differs from *P. truncata* in the shape and size of the spicule and the curling of the male tail. *P. upembae* n.sp. from *Porphyrio madagascariensis* is distinguished from *P. alata* by the arrangement of the caudal papillae in the male and the position of the female genital opening "en deçà du tiers anterieur". *Aprocta textori* n.sp. from *Textor melanocephalus duboisi* has very tiny spicules (225 $\mu$), the anus is small and the female genital opening is placed very far anteriorly. *A. cylindrica* var. *cercomeiae* n.var. from *Cercomela familiaris modesta* differs from the type

species in the much smaller size of the male and the size of the spicules. *Aproctiana angolica* n.sp. from *Prionops poliocephala angolica* is differentiated from *A. meirai* on the grounds of different host and geographical distribution. *Tetracheilonema rodhaini* n.sp. from *Halcyon albiventris orientalis* is strikingly different from *T. quadrilabiatum* in the form of the chitinized collar around the anterior end. *Diplotriaena textori* n.sp. from *Textor x. xanthops* has spicules without wings or spirals (spires) and the post-anal papillae are lacking. *D. tocki* n.sp. from *Tockus alboterminatus stegmanni* is close to *D. flabellata* but the presence of post-anal papillae and the absence of a detailed description of the latter justify its separation. *D. dicruri* n.sp. from *Dicrurus a. adsimilis* is provisionally described and illustrated as new but is very similar to *Diplotriaena sokolowi*. *D. diucae* var. *upembae* n.var. is described from *Emberiza cabanisi orientalis* and the author is of the opinion that the specimens from *Emberiza* spp. in China identified by Hsi-Chieh Li as *D. diucae* belong to the new variety. *D. diucae* var. *manningi* n.var. from *Chlorophoneus nigrifrons manningi* is distinguished from *D. diucae* by the strikingly short trident. *D. diucae* var. *dryoscopi* n.var. from *Dryoscopus cubla hamatus* differs from *Diplotriaena diucae* var. *upembae* in the appearance of the lateral fields. *Politospiculum upembanum* n.sp. from a host which was probably *Megaceryle maxima maxima* differs from the genotype in the conical form of the labia, the absence of lateral alae along the length of the body although the caudal alae are better developed and the length of the large spicule which is more than three times that of the smaller. *P. upembae* var. *kulwezi* n.var. from the same host is differentiated from *P. upembae* by the wavy striations on the posterior ventral surface of the male and the form and length of the spicules. *Parhamatospiculum uncertenum* n.sp. from *Ceratophora cinera* conforms with the genus as defined by Skryabin and has large knobs (écussons) placed sublaterally on the labia. S.W.

1011—*ZERFASS, H., 1953.—"Verbreitung parasitärer Tierkrankheiten im Kreise Simmern." Dissertation, Giessen, 60 pp.

1012—ZIMMERMANN, E., 1953.—"Vergleichende Untersuchungen über die Wirkung von Benzopar, Coopazin, Phenothiazin-aufschwemmbar-Bengen und Phenothiazin 'Hoechst'bei, Magenwurmbefall des Schafes unter besonderer Berücksichtigung des Blutbildes." Dissertation Munich, 44 pp.

Zimmermann has compared the efficacy, and effect on the blood picture, of four phenothiazine preparations—Benzopar, Coopazin, phenothiazine Hoechst and phenothiazine Bengen—when used against stomach worms in sheep. In all 104 sheep were treated and the dosage, in each case 20 gm., was well tolerated even by anaemic animals. Treatment was in all cases successful and there was no difference between the various preparations either in anthelmintic action or in their effect on the erythrocyte or haemoglobin count. A.E.F.

# INDEXES



## NOTE

In all indexes the reference is to the serial numbers and not to the pages. Numbers in **bold** type indicate abstracts, and numbers in Roman type refer to title-only entries.

In the Author Index there are no cross-references to show joint authorship, but authors of joint papers are listed individually. Thus, a paper by "Brown, B., Jones, A. & Smith, J." would have three separate entries, "Brown, B.", "Jones, A.", and "Smith, J.".

In the Index of Subjects, alphabetization is under the first word (e.g. "*Acer* sp." before "*Acerina* sp."). Under the generic name of a helminth the following order is observed: papers on the genus as such; papers on undefined species; papers on new and defined species, e.g.

*Capillaria*
— spp.
— *aerophila*
— *amarali* n.sp.

In cross-entries under names of hosts, the specific names of new species of helminths are omitted. Hosts are indexed under their scientific names, where given, except domesticated animals (e.g. cat, pig, sheep), crop plants (e.g. oats, rye, tobacco), and where numerous hosts of the same group are listed in the one paper (e.g. amphibians, birds, cereals, legumes, mammals).

*Anthelmintics* are listed under that word, under the name of the parasite or disease, and under the name of the host. *Nematicides* for plant eelworms are listed separately under that word and under the name of the parasite.

# INDEX OF AUTHORS

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|---|---|
| 48n (Abstract) | Line 2 For "*pennsylvanicum*" read "*pensylvanicum*" |
| 209a (Title) | Line 1 *For* "**6** (2), 1–24" *read* "**6** (2), 90–113" |
| 222y (Abstract) | Line 3 For "*L. megalotus*" read "*L. megalotis*" |
| 378a (Title) | Line 1 *For* "RÜHN" *read* "RÜHM" |
| 434x (Abstract) | Line 3 For "*Arythmorhynchus*" read "*Arhythmorhynchus*" |
| 434bi (Abstract) | Line 7 For "*Cornatzium* and *Acanthotzema*" read "*Cornatrium* and *Acanthotrema*" |
| 437 (Abstract) | Line 5 *For* "46 families of Gasterostomata" *read* "46 families of Prosostomata and one family of Gasterostomata" |
| 528c (Abstract) | Line 3 For "*T. elongatus*" read "*T. elongatum*" |
| 551a (Abstract) | Line 17 For "*Silondia*" read "*Silundia*" |

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